GENERAL LIBRARY
UNIV. OF MICH.

Vol. X

OCT 13 1936

No. 4

# THE NEW SCHOLASTICISM

## A Quarterly Review of Philosophy

October, 1936

I. Hylomorphism and the Conversion of Mass into Energy ..... JOSEPH M. MARLING

II. Vitalism, Abiogenesis and Theism ..... DANIEL C. O'GRADY

III. Substance and Accident in the Philosophy of Descartes ..... HENRY B. VEATCH

IV. BOOK REVIEWS

*Moody*, The Logic of William of Ockham; and *Doyle*, Les questions inédites manuscrits universitaires du XIIIe et du XIVe siècle, by Philip S. Moore; *Occorsio*, La Metafisica del Verbo e del Costumi di Antonio Rosmini-Serbati, by E. A. Walsh; *Sheehan*, The Catholic Tradition of the Law of Nations, by John A. Ryan; *Ruland*, Foundations of Morality, by Timothy Brosnan; *Logeion*, A Mathematician Explains, by A. E. Lavell; *Wood* (Ed.), William Torrey Harris, 1835-1935, and *Mendizábal*, Guglielmo d'Auvergne e San Tomaso d'Aquino, by E. A. Walsh; *Sanford*, Concerning Knowledge, by Joseph M. Harding; *Rousselot*, Introduzione Generale alla Philosophia di San Tommaso and Metafisica Generale, Vols. I and II, by E. A. Walsh; *Brosch*, An Introduction to Contemporary Catholic Philosophy, by Henry A. Logan; *Schmidlin*, Catholic Mission Theory, by Daniel C. O'Grady; *Bury*, The Idea of Progress, by Daniel C. O'Grady

V. CURRENT PHILOSOPHICAL REVIEWS AND BOOK NOTES

CATHOLIC UNIVERSITY PRESS

WASHINGTON, D. C.

SINGLE COPIES $1.00

# THE NEW SCHOLASTICISM

## A QUARTERLY REVIEW OF PHILOSOPHY

EDITED BY

EDWARD A. PACE — JAMES H. RYAN
JOHN K. RYAN — FRANCIS A. WALSH

---

OCTOBER, 1934

I. Hylomorphism and the Conversion of Mass into Energy ..... JOSEPH M. MARLING 311

II. Vitalism, Abiogenesis and Theism ..... DANIEL C. O'GRADY 324

III. Substance and Accident in the Philosophy of Descartes ..... HENRY R. SUSKE 338

IV. Book Reviews ..... 383

*Moody*, The Logic of William of Ockham, and *Destrez*, La pecia dans les manuscrits universitaires du XIIIe et du XIVe siècle, by Philip S. Moore; *Cocotti*, La Metafisica del Bello e dei Costumi di Arturo Schopenhauer, by F. A. Walsh; *Appleton*, The Catholic Tradition of the Law of Nations, by John A. Ryan; *Ruland*, Foundations of Morality, by Timothy Gannon; *Logsdon*, A Mathematician Explains, by A. E. Landry; *Schaeffer* (Ed.), William Torrey Harris: 1835-1935, and *Mennone*, Da Guglielmo d'Auvergne a San Tomaso d'Aquino, by F. A. Walsh; *Sanford*, Concerning Knowledge, by Joseph M. Marling; *De Raeymaeker*, Introductio Generalis ad Philosophiam et ad Thomismum and Metaphysica Generalis, Vols. I and II, by F. A. Walsh; *Brock*, An Introduction to Contemporary German Philosophy, by Henry A. Lucke; *Waitzkin*, Primitivism and the Idea of Progress, by Daniel C. O'Grady.

V. Current Philosophical Reviews and Book Notes ..... 409

---

Business communications, including subscriptions and changes of address, may be addressed to the Catholic University Press, 12-32 Hopkins Place (Rouse Building), Baltimore, Md., or to The New Scholasticism, Box 176, Catholic University of America, Washington, D. C.

Address communications concerning articles, reviews, and all matters of editorial policy or work to The Editors, The New Scholasticism, Catholic University of America, Washington, D. C.

European Agents: B. Herder, Karlsstrasse, 35, Freiburg, Germany.

---

Published by

Catholic University Press, 12-32 Hopkins Place (Rouse Building), Baltimore, Md.

Editorial Offices: Catholic University, Washington, D. C.

Printed by J. H. Furst Co., Baltimore, Md.

Entered as second-class matter December 12, 1928, at the Postoffice at Baltimore, Md., under the Act of March 3, 1879.

THE
NEW SCHOLASTICISM
A Quarterly Review of Philosophy

Volume X OCTOBER, 1936 Number 4

# HYLEMORPHISM AND THE CONVERSION OF MASS INTO ENERGY

TWELVE years have passed since the publication of P. Descoqs' *Essai Critique sur L'Hylémorphisme*, a comparatively long time if one has in mind the progress of physical science, and the ease with which it outmodes even the more recent publications. Nevertheless, it cannot be said that the learned Jesuit possessed fewer essential data than we to-day, pertinent to the discussion of the essential structure of matter. In fact, since the turn of the century, and the identification of the electron through radioactivity as an infra-atomic particle, the Neo-Scholastic may be said to have had in the main, the salient facts with which to test the veridical character of hylemorphism. That full agreement has not been reached, however, goes without saying. There are Scholastics who cling to the theory of prime matter and substantial form with full assurance; there are others who espouse it with less confidence. Some would have it include a plurality of forms; others prefer it in its Thomistic dress. Many agree with Descoqs that the argument from substantial change can no longer serve as its basis; others see in such an admission the ultimate abandonment of the entire theory. The relation which the elements assume in a compound

is as warmly discussed as in the days of Avicenna and Averroes. The question of unity in a structure discontinuous and discrete is still solved in divers ways. For the Scholastic, however, the situation assumes no alarming proportions. He realizes that the evidence for a dualism of matter and form in organic structure is unimpeachable, and that even the complete surrender of hylemorphism in the inorganic realm would have no exceptionally deleterious effects upon the rest of the philosophical edifice.

All things considered, however, the claim that hylemorphism still outdistances its rivals in offering a rational explanation of the ultimate nature of matter is not an empty one. It is not the purpose of this paper to defend this thesis, to examine anew the traditional disputes and resolve them, but, rather, to select at random one or the other of the recent claims of science that have a possible bearing upon the theory of matter and form. The test of the latter with regard to the ultimate elements is still to be made. Naturally, such a test must await the scientist's word. It is wholly within his province to indicate the ultimate particles, to describe their properties and their interrelations, to pronounce with regard to their transmutation. Apparently, physical science is moving ever nearer to this goal, and the philosopher must be an interested observer of its advance. The mass of new data and of new claims he must sift for their philosophical implications, absorbing and integrating them if they bear the proper credentials.

Among the many notable triumphs of science within the recent past is to be listed the transmutation of the so-called elements into one another. This phenomenon, the goal of the alchemist's quest, was first achieved by Rutherford in 1919, by the bombardment of the atomic nucleus with alpha particles of radium. Great success in this undertaking has been attained within very recent times; the operation has been simplified and widened by the employment of wholly artificial techniques. Worthy of

especial note is the easy method of transmutation, the artificial beta ray radioactivity made possible by the use of Chadwick's particle, the neutron, as a bombarding agent. Three-fourths of the elements can be transmuted to-day as the result of this general progress. That there is nothing in the contemporary procedure to resemble the transmutation which Aristotle accepted, as the cornerstone of his theory of matter and form, is immediately evident. Only if it can be shown that the atom is the true natural unit in nature, is it possible to give to modern transmutation the semblance of independence, as an argument for matter's dualism. But in connection with this recent research, certain by-products, as it were, have put in an appearance, that open up discussions relevant to philosophical theory. Among them is the transformation of mass into energy.

It was because the mediaeval Scholastics sought to show the hylemorphistic character of the heavenly bodies, that they broached a proof for the theory of matter and form that was not drawn from Aristotle, but probably from Avicenna. Aristotle had taught the absence of substantial change in celestial matter, and the question of a unitary principle, as responsible for its structure, was discussed. The presence of prime matter was upheld by the majority of the Scholastics, among whom was St. Thomas. In proof of their stand it was argued that the heavenly bodies betray properties, that presage the presence of matter,—passivity, sense perceptible qualities, and extension. Suarez is clearest in his enumeration of these telling notes. Withdrawn from its quaint setting, the argument has taken its place beside that of substantial change in the traditional presentation of hylemorphism. And it is evident that, if the impossibility of transmuting the ultimate particles is ever discovered, the fortunes of the latter at the heart of nature will depend largely upon this proof. The demonstrative value of the argument has been variously appraised. Some, like Descoqs, afford it a primacy of honor. Others, like Donat, question its apodictic

character, emphasizing that it may establish merely a dualism of mental precision, and marking that Aristotle himself probably viewed the heavenly bodies as constituted of form alone. The proof has been presented in various ways, that are little more than the expression of various points of view. A contrast has been drawn between the extension, mass or inertia and the activity or energy of bodies; between their qualitative and quantitative properties; or between their indeterminate and highly specific characteristics. It is our endeavor to determine if contemporary claims for the transmutation of mass into energy, and of energy into mass, contravene in any way the force of this demonstration.

The equivalence of energy and mass was proposed by Einstein in the special theory of relativity. Accepting light as a constant velocity for each and every frame of reference, and the Lorentz transformations in explanation of this phenomenon, Einstein was led to postulate the contraction of a moving body inversely to the increase of its velocity, and the increase of its inertial mass directly to the amount of energy acquired; so that, since light is also a limiting velocity, when the velocity of light would be reached, a body would contract to a point, yet attain an infinite mass, that would vanish into the vast reservoir of infinite energy as the real body disappeared.[1] Einstein thus makes the inertial mass of bodies a measure of their energy ($E = mc^2$). He goes on to identify the laws of the conservation of mass and of energy, to pronounce energy and mass equivalent, to conclude that mass, after all, is energy in a coagulated state.

The scientific value of these statements is not our concern. Nor, does our problem really lie here. It is not the strict

[1] A limited corroboration of the relation between velocity and mass as postulated by Einstein is claimed by recent science. Fast electrons, spontaneously liberated from radioactive bodies, it is held, possess a mass several times greater than electrons at ordinary speeds. The very energetic electrons appearing in cosmic radiation are found, it is said, to have greater mass than that of the hydrogen atom.

identification of mass and energy that needs our attention, but rather the possibility that the two distinct realities may stand in such mutual relation to each other, that it may be more proper to attribute them to the same proximate source or principle. Einstein seems to subscribe to a theory of extreme dynamism. Others clearly hold such a conclusion logical. "The Einstein theory was not needed," one commentator writes, "for what has been a common conclusion of philosophers . . . no less than energy manifested in molar or molecular motion, matter, in its resisting and extended essence, the 'something-there-ness' termed substance, is analyzable into a manifestation of force. Matter and energy are one." [2] That such a conclusion outstrips its data is evident. Mass, from a metaphysical standpoint, is not even in question, for Einstein describes the gradual contraction of the physical object even to its disappearance as a mathematical point, while the energy swells to a physical limit. Inertia is meant, and the method of concomitant variation that is employed to show its strict relation to energy, can in no way be made to argue for the identity of the two realities. If by identity the mathematician means that two objects are so related that in all mathematical computation they may be treated as if they were one, his words have meaning, but they must be translated or paraphrased before they will permit of strict philosophical analysis.

Contemporary science is deep in the problem of converting mass into energy. It is held that the equivalence which Einstein expressed is actually demonstrable upon a very small scale. And in certain quarters it is hoped that, in the long run, the source of the tremendous energy of cosmic radiation can be designated in such a transmutation. There is evidence for an energy increase in atomic transformations that runs counter to the classical law of the conservation of energy. It has been dis-

[2] S. Guggenheimer, *The Einstein Theory Explained and Analyzed* (New York: The Macmillan Co., 1925), p. 123.

covered, for example, that when the lithium atom is bombarded by high speed protons, artificially produced, the lithium nucleus is disintegrated by the capture of an incident proton. Two helium nuclei appear, flying apart because of their kindred charge, and with a great display of kinetic energy. The amount of the liberated energy can be computed, allowance being made for the energy of the bombarding particle. Actually it is found to measure 17.1 million electron volts, which corresponds, according to the Einstein formula to a loss of mass of 0.0181 units. Measurement by a mass-spectrograph discloses that this is the actual decrease.[3] The transformation of mass into electromagnetic radiation is evidenced in the appearance of two photons of radiation with appreciable energy, upon the incidence of an electron and a positron. Results of this kind, the general accuracy of which can scarcely be questioned, have been obtained with increasing frequency.[4] Evidence for the reverse process, the conversion of energy into mass, is also claimed. Lithium, for example, has been bombarded with the nucleus of the helium atom, and an atom of boron with greater mass has appeared. This gain has been found to be proportional to the loss of kinetic energy upon the part of the impinging alpha particle.[5] A similar case is the production of pairs of electrons by the action of high

[3] Cf. for example, Lord Rutherford, "The Transmutation of Energy," in *Nature* (Jan. 25, 1936), Vol. 137, n. 3456, p. 135 f.

[4] In some cases of transformation it has been found that the balance between mass and energy is hardly sustained. More energy appears than the equivalence formula would indicate. The exception seems to exist where processes involving very high velocities or radiation are at stake. It is admitted that part of the energy may be carried off in some unknown form, e. g. in the hypothetical particle, the neutrino, around which much research is being centered at the present time. Cf. P. A. M. Dirac, "Does Conservation of Energy Hold in Atomic Processes?" in *Nature* (Feb. 26, 1936), Vol. 137, n. 3640, p. 298, where Shankland's newer interpretation of the Compton effect is cited in support of Dirac's own stand in favor of restriction.

[5] Cf. "Energy Turned into Mass for the First Time in History," in *Science* (April 7, 1933), Vol. 77, n. 1997, supplement 9, p. 9.

frequency gamma rays. Confirmation of the commensurate relation between mass and energy is seemingly evinced, also, in the recent discovery that isotopes vary by the slightest shade in their spectral lines from those of the respective normal atom. The electromagnetic theory of matter postulates a unitary source for energy and mass, the particular electric charge which the particle carries.

In evaluating the situation at hand it is necessary to be clear with regard to terms. Quantity, inertia, mass, and atomic weight are words of kindred meaning, but actually descriptive of distinct entities. Inertia is that property of matter by which bodies at rest or in motion are averse to a change in these respective states. Mass is the measure of inertia, and since inertia is usually viewed as the chief property of a material being, mass is commonly seen as the amount of structure which the material object possesses. Most fundamental is quantity, by which a body has parts commensurate with parts of enveloping space. It is common in physical science to identify mass with matter; reference to the law of the conservation of matter is evidence of this attitude. But mass is not substance or the nature of body as such. Mass is a modification of substance, an accident. In gross structure it is easy to show that an increase of mass leaves the nature or substance, as such, unaffected. If it is impossible to tamper with mass in minute particles without affecting the nature, this may be proof of the mistake that is made in neglecting ordinary experience, and feeling that we know nature truly, only if it is laid out before us in grains. We speak of the mass of an atom. No mode of speech, or logical habit alone, necessitates this; it is expressive of the sole way in which we know reality. Quantity or mass is perceptible to the senses; substance or nature lies beyond what the senses, as such, report. Substance is seized by the mind, cognized; it is not the proper object of sense perception. It is known as modified by quantity, and hence, as affording its own inherent

subsistence as the latter's support. To give quantity means to give quantity to something. On the other hand, to be quantified lithium, or carbon, or oxygen, means to possess native independence, natural ability to subsist in one's own right. Matter and mass cannot be identical.

A series of kindred terms is energy, quality, activity, atomic properties or number. They are not precisely identical, and it is only an intemperate desire for simplicity that could make them one by a common reduction to local motion. Enough has been written in refutation of the kinetic theory of qualities. It may be well, however, to call attention to a relevant achievement of science during the very past year, the production of near molecular rest at a temperature only a degree or so above absolute zero. A magnetic field is set up when these low temperatures are reached, drawing the particles into line against their inclination. When the field is cut off the particles rebound to their natural position, expending their energy in so doing, and remaining almost without motion. There is no indication that cohesion, attraction, or any of the natural properties of the particles decrease as the motion is almost obliterated. If all energy is merely local motion the effect can hardly be explained. In simple mechanics energy designates a capacity to do work. If the various qualities of bodies are seen purely in their dynamic aspect, as capable of producing certain stable effects, the term energy may be employed to delineate them. But it must then be remembered that, unlike quantity which permits of difference in degree alone, energy suggests a difference in kind, that prohibits summation by the mere process of simple addition. Energy, like quantity, cannot lay claim to subsistence. Essentially an accident, it demands a subject or nature, in the qualification of which, is expressed both the reason and the root of its existence. In physical or mathematical description the denial of this may have no ill effects. With philosophical enquiry, however, it must play havoc, and from the very start of

the analysis by reason of the elementary character of the error.

Let us assume that the contemporary claim for the transmutation of mass into energy is correct, that in certain atomic transformations there is a quasi-exchange of mass for energy, or vice versa. There is not a balancing of mass and mass, of energy and energy; the two classical principles of conservation operate in these instances only if they are united and totalled in this fashion. Does such a phenomenon posit a single proximate source for mass and energy? The electromagnetic theory presents a unitary source, the electric charge. It is well to see, however, that a single source from a physical viewpoint may not be such from a philosophical angle. A physical object itself may be correctly viewed as the ground of its various properties, without deciding whether it has a dual nature that is fundamentally responsible for a dual set of attributes. It is proper to insert a word with regard to the electric theory of matter. Philosophy can have no quarrel with science in the event that it really shows matter to be constituted of electricity alone, but then the inertia and the active properties of electricity must both receive due stress. There are phenomena that the electric theory has not explained as yet, that match without difficulty with the belief that there is a fundamental matter which supports the electric charge. The proton, for example, is presumed to show the unit charge of positive electricity. The positron is positively charged also, but its mass resembles that of the electron, while the mass of the proton is akin to that of the neutron which has no charge whatsoever. The same disparity exists between the electron and the negatron. The indication of a difference between energy and mass that is present here, has not been removed by the contemporary discussion as to whether the proton or the neutron is the fundamental particle.

The radical differences between quantity and energy have in no way been contradicted by the possibility of their restricted transmutation. Quantity may be symbolized by atomic weight;

the energy or character of an atom by its atomic number. In atomic structure it is the latter that is of greater importance. It is the atomic weight that permits of nuclear disintegration, that expresses the refractory attitude of a particle to the acceleration of its velocity. Atomic weight is capable of simple addition and subtraction. It suggests an indifference to division, a spatial relation, a common bond between all material particles. The atomic properties, on the other hand, betoken definiteness, preciseness, and thus tend to emphasize the very accurate lines according to which the elements are differentiated. They suggest a proclivity for uniqueness and stability, a distaste, as it were, for the loss of identity. They bespeak a large variety of efficient agency, and the impossibility of entering by way of mere addition, into some new quality or characteristic. For, if it is true to say that one proton and a single electron form an atom of hydrogen, it is equally correct to hold that the qualities of hydrogen are not the mere sum of the characteristics of the two particles. In the same way, two atoms of silver may be said to represent more silver than either taken singly. But from another angle the proposition is not true. Quantitatively there is more; qualitatively there is not. Two masses of quantity mean an increase of quantity; two sets of properties do not sum up in that fashion. The working agreement between mass and energy cannot gloss over these radical differences, which of themselves point to individual sources for energy and mass, to two principles which form the texture or nature of the material object which they modify, and cause to present such diverse faces.

The transmutation of mass and energy will fit into the Scholastic theory of matter and form without constraint or distortion. Efforts have indeed been made to establish the two principles of conservation by a priori reasoning. Nys would see the conservation of matter as rooted in the Aristotelian notion of prime matter as the subject of substantial change, the same amount

of the latter appearing in the end result as was present before the mutation. This may legitimately be questioned. The notion that the same body could vary its actual quantity was clearly contained in the explanation which the mediaeval Scholastics gave of expansion and contraction, in their effort to account for the possibility of local motion. This view Nys does not condemn. The independent principles of the conservation of matter and energy are the result of induction. If contemporary science reveals that relevant data were omitted, the sway of the two principles as independent laws must at least be curtailed. The phenomena which result in the transformation of mass and energy are clearly examples of substantial change, the subject of which in the Scholastic theory is prime matter. Prime matter alone remains throughout the process. The form and its determinations disappear, replaced instantaneously by a new form and a new determinateness. Prime matter is the ground of quantity and mass, but strictly, of itself, it is without predilection for any given amount. If it may be said to possess an exigency for a definite quantity, this is only in the real order where it implies privation, where its unlimited potentiality is reduced and an inclination for definite forms appears. Ontologically, substantial form is responsible for the amount of quantity, as it is for energy or quality. Substantial change, which is instantaneous, is nevertheless achieved indirectly by the gradual modification of the qualities of an object, the latter reaching a point where a new form is required to be their support. An unbalanced state, as it were, is set up which, within certain limits, the old form can control. When that limit is overstepped the new form, for which the qualities have set up a predisposition, puts in an appearance. This seems to be well exemplified in the case of an isotope. A definite increase or decrease in atomic weight occurs, together with a corresponding change in quality, but the original form persists. The same atomic number is thus assigned to the isotope as to the normal

atom. But let the mass be further enlarged or diminished and transmutation will occur. In the cases of the transformation of mass into energy the actual conversion is a gradual affair. Agents operating upon the original substance set up accidental modifications until these latter call, as it were, for a new form to which less mass and greater energy are proper. It is true that this description is general, but our every delineation of substantial change is foredoomed to be such. If we could ever know the capacities of prime matter in the real order in a priori fashion, we could be specific with regard to details, but that is to ask for a glance at the blue prints of creation, something that is denied to finite minds.

Essential to the theory of hylemorphism, in fact, to any rational picture of the universe, is the recognition of substance. The manner in which substance has been proscribed by modern thought is common knowledge. The difficulty at heart is epistemological. Substance is not grasped by sense experience; hence, it cannot be refuted or defended on the basis of experiential or physical observation alone. Certain scientific theories, however, have been drafted to serve the cause of eventism and energism. If we question these data successfully we are not, it is true, establishing the existence of substance, but merely removing the basis, upon which a contemporary denial of substance has been reared, insisting all the while upon the fundamental error of method evident in an attempt to solve the problem of substance empirically.

The ceaseless motion and feverish activity manifested by nature's smallest particles have been claimed in support of a theory of extreme dynamism. It is here that we may call attention to a successful experiment of most recent date, already described, the attainment of near inactivity on the part of molecules and electrons by the evaporation of liquid helium, at a temperature approximating absolute zero, .005° C. above ab-

solute molecular rest. The electromagnetic theory of matter with its tendency to slight mass or quantity, has also been employed by certain thinkers to give louder claim to a disavowal of substance. Scholastics, at times, are heard to hail the reduction of all matter to electricity as an approach to the peripatetic notion of prime matter. It is difficult to appreciate this view. Little resemblance is to be found between the two ideas; and, the ultimate success of the former would almost certainly, though without warrant, lead to a monistic interpretation of material reality in many quarters. Here we may emphasize again the distinction between the so-called light and heavy particles. It may be that either the proton or the neutron will be found to be a complex structure, the one being fundamental in the make-up of the other. But until this is demonstrated, the theory that matter with its own definite mass is a basic reality, cannot be said to be outlawed by physical science.

JOSEPH M. MARLING.

*Saint Charles Seminary,*
*Carthagena, Ohio.*

# VITALISM, ABIOGENESIS AND THEISM

IT is the purpose of the present paper to attempt the clarification of a few issues in the philosophy of biology. Recent claims in the direction of proof for spontaneous generation or demonstrations of abiogenesis would seem to be, at least ostensibly, contradictory to the general trend of theoretical biology in the twentieth century. Since Bergson and through Driesch, Lloyd Morgan, Lodge, Rignano, Uexkull, Smuts, the Haldanes, Windle, J. A. Thomson and others down to Whitehead there has been an orientation in biological speculation toward anti-mechanistic theories of various sorts. Many Scholastic philosophers and Catholic apologists have with considerable confusion displayed a hospitality toward this current of thought as though traditional affiliations were equivalent to blood-relationship. Indeed their conception of those very traditional affiliations was often near-sighted. A notable exception was the article entitled "The Mechanistic Conception of Life" in this journal by U. A. Hauber.[1] The present writer contends, however, that because vitalistic conclusions are frequently allied with pantheistic, idealistic or absolutistic doctrines, such associations need not be regarded as inevitable.

It must not be forgotten that it is to Pasteur and not to Aquinas that we Neo-Scholastics are indebted for our legacy of opposition to the belief in spontaneous generation. That question is an empirical or scientific problem, primarily, and while this writer feels inclined on the available evidence to adhere to the negative, he insists that the affirmative position is not only compatible with theism but that it is not intrinsically antithetical to vitalism. Abiogenesis is compatible with theism, as in Aquinas, and even with vitalism, as in Aristotle.

[1] U. A. Hauber, "The Mechanistic Conception of Life," *The New Scholasticism* (Vol. VII, No. 3, July, 1933), pp. 187-200.

Again, mechanism is not irreconcilable with theism, as the views of Descartes, Paley and Schwann would indicate. Of course, many contemporary anti-mechanists lean heavily towards pantheism just as most mechanists tend toward materialism and atheism. Likewise vitalism seems more in harmony with spiritualism and theism, but such alliances are not exclusive. One can accept belief in a personal, infinite, transcendent Creator and in a spiritual and substantial human soul without claiming an essential distinction between plants and minerals.

One might observe, parenthetically, that mechanism, materialism and atheism should not be identified despite their community of tendency. Hobbes was a materialist but not an atheist. Francis Bacon aided the materialistic cause by his emphasis on inductive method and his empiricistic epistemology but he was explicitly a theist. Descartes was a mechanist with respect to minerals, plants and animals but he was a spiritualist as far as human nature is concerned, and, of course, he was a theist. Huxley and Spencer were agnostics rather than strict atheists and even Haeckel may more aptly be catalogued as a pantheist than as an atheist or even materialist. The same might be said of Priestley. Gassendi, who revived the atomism of Epicurus, rejected its atheism. Indeed the greater names in the history of materialism and atheism belong in that category only implicitly. One has to go to Diderot, Cabanis, Helvetius, La Mettrie, Holbach, Vogt, Moleschott, Buchner and the like to find out-and-out materialists and atheists.

The belief in spontaneous generation was the common opinion before the invention of the microscope. Long before Pasteur and Tyndall, however, it was questioned by Redi, Swammerdam and Leeuwenhoek of the seventeenth century and a century later by Abbé Spallanzani.[2] Aristotle, the vitalist, thought that

[2] Cf. A. Wolf, *A History of Science, Technology and Philosophy in the 16th and 17th Centuries* (London: 1935); B. C. A. Windle, *The Church and Science* (London: 1920).

grubs are sometimes derived from inorganic sources. Aquinas, too, accepted this view and Harvey, one of the founders of modern biological science, subscribed to this opinion, although, despite Huxley's exposure of the common misinterpretation of the former's celebrated formula, *Ex ovo omnia,* the contrary is frequently asserted. It is interesting to note in the light of contemporary confusions that the Scriptures were in those pioneering days invoked against the above-mentioned skeptics whose names since the days of Pasteur have assumed an orthodox repute. The belief in spontaneous generation was later defended by Father Needham, Vogt, Pouchet and Haeckel despite the wide acceptance of Pasteur's conclusions. But again it is worth noting that T. H. Huxley sided with Pasteur while Julian Huxley, today, favors abiogenesis; the senior Huxley however held that it once occurred.

Since Pasteur until quite recently the doctrine of biogenesis has been the dominant theory of the proximate origin of living things but abiogenesis is receiving increasing attention and supporters.[3] Wöhler's synthetic production of urea in 1828 inspired many to predict that living protoplasm would eventually be artificially concocted in the laboratory. Recent work on filter-passing viruses has induced several optimistic mechanists to assert that the gap between the inorganic and the organic is almost bridged. They maintain that while animals, plants, macteria (microbes, germs, etc.), and filterable viruses proper are definitely organic or biologic and while the spontaneously formed sugars and amino acids, colloids, enzymes or organic catalysts, protein molecules and other lifeless, organic (or carbon) molecules are definitely inorganic, physico-

[3] Cf. Oscar Riddle, "The Confusion of Tongues," *Science,* Jan. 17, 1936; George Crile, *The Phenomena of Life: a radio-electric interpretation* (New York: 1936); Gray and Bligh, *The Origin of Living Matter* (Cambridge, England: 1933); Sir F. G. Hopkins, "Chemical Aspects of Life," and Dr. J. Gray, "The Mechanical View of Life" in *The Advancement of Science* (British Assoc.), 1933.

chemical, inanimate and belonging to the mineral kingdom, there are nevertheless between these frontiers dubious or borderline entities such as bacteriophages and ultra- or sub- or non-filterable viruses. Thus there has been prepared or isolated a crystalline protein which is autocatalytic, which is identical with the virus causing the plant disease called tobacco mosaic and which has at least the reproductive property usually associated with living things exclusively.

It is contended that an entire sphere of research of which Pasteur was innocent has been discovered and that the exploration of this realm has altered the status of the controversy. We need not here enter into a technical discussion of Lytic principles, Rickettsia bodies, the curious parallel in properties between a certain virus and the gene or other recondite and abstruse topics but while the case for abiogenesis is as yet unproved, we must recognize the possibilities latent in the claims of Ray Lankester, Sir E. Schaefer, Professor Hogben, Bishop Barnes and Mr. T. H. Morgan.

The hypothesis that life was brought to our planet by meteors has been frequently entertained although this view merely transfers the problem to another locale and is no proof of abiogenesis. How did life, wafted to its present terrestrial abode in cosmic dust, first originate? Scientists have not accepted as authentic the claims made in February, 1933, by Professor C. B. Lipman of the University of California who reported the discovery in meteorites of bacteria similar to terrestrial microbes. A similar view is held by the Russian scientist, D. F. Sinitsin, according to whom space is filled with invisible living organisms which he calls *aphanobionts.* Such conjectures recall the opinion of Kelvin, Helmholtz, Preyer and Arrhenius, according to whose panspermy doctrine or cosmozoic hypothesis living germs of cosmic origin colonized our earth after having been transported hither probably by the pressure of light. To date this theory is at best arbitrary and gratui-

tous and "explains away" the whole question of the origin of life, or it is equivalent to the hylozoism of the Greeks and even suggests the animism and anthropomorphism or euhemerism of primitive aborigines.

Perhaps the key to the solution of the controversy between mechanists and vitalists is to be found in a revision of the catalogue of nature. Traditionally four grades of being or levels of existence in nature have been recognized. These are, of course, (1) the mineral kingdom which is described as inorganic, inanimate and physico-chemical; (2) the plant kingdom which is said to be vital, organic, animate, biotic or living; (3) the animal kingdom which we call mental, conscious, sentient, nervous and psychic; and (4) the human realm, order or sphere which is indicated by such epithets as rational, intelligent, moral, social and spiritual. Perhaps, instead of solving the problem of the lacuna or hiatus between the plant and the mineral, our contemporary champions of abiogenesis will bring about the recognition of the existence of a fifth grade of being. Many have contended that bacteriology should be granted autonomy. The monistic tendency of science often results in an over-simplification and, ironically, such efforts may multiply frontiers instead of reducing them.

It was Lamarck who proposed the term "biology" for the sciences of life, thus linking botany and zoology together, and it was Linnaeus who grouped plants and animals together under the generic name, organism, while Claude Bernard gave a detailed account of what the two have in common. To Bichat, the Catholic histologist, "the plant is the framework or foundation of the animal." Nor must we forget that the zoologist really studies the animal as a plant inasmuch as he ignores consciousness which is the criterion whereby, traditionally, the animal is given separate status on a higher level in nature. Likewise the anthropologist usually regards man as belonging to the animal kingdom. There is, thus, a tendency to reduce the grades of being to three or even to two.

Descartes reduced the four grades of being to two by considering animals and plants as mere machines on the inorganic or mineral level. Bruno asserted "*non est lapis sine anima.*" Spinoza taught that animals, plants and even inanimate objects think. Leibnitz held that plants and minerals were at least subconscious. Aristotle and Cuvier seem to have regarded a plant as an animal that sleeps. Clifford held that all matter is conscious. Coleridge thought that the inorganic is asleep. Fechner, in his *Nanna,* compares the mental life of plants to that of a foetus. Sir J. C. Bose credits plants with sensitivity or consciousness. The late Sir J. A. Thomson lumps plants and animals together by reducing nature to cosmosphere, biosphere and sociosphere. William McDougall likewise seems to predicate mind to all organisms, on the ground that wherever there is purpose there is mind. Finally, Bernhard Bavink[4] attributes mind, with a "perhaps," to all living things.

On the other hand there are those who would favor a separate kingdom of *Protista* for all the unicellular organisms whether plant or animal. This kingdom was proposed by Haeckel in 1878, although he favored the notion of continuity between the inorganic and the organic.

As long ago as 1885, J. S. Haldane stated that if and when a meeting-point is found between the biological and the physical sciences "and one of the two sciences is swallowed up, that one will not be biology." The present writer is of the opinion that the "swallowing up of physics by biology" is an extreme opposite to that of the mechanism formerly so prevalent. The Vitalism of Driesch, the Holism of Smuts, the Creative Evolutionism of Bergson, the Emergent Evolutionism of Lloyd Morgan and the kindred doctrines of the Haldanes, L. von Bertalanaffy, Oliver Lodge, A. N. Whitehead, E. S. Russell, L. Henderson, W. MacBride, Eugenio Rignano, Wildon Carr, J. von Uexkull, R. Wolterech, J. A.

[4] *The Natural Sciences* (New York: 1932), p. 301.

Thomson, W. McDougall, B. Windle and A. V. Hill are in the classical tradition of Aristotle, Leibnitz, Stahl, Cuvier, Bichat, Pasteur, A. R. Wallace and S. T. Coleridge. Many of these theories are part of a wider philosophy which might be called ultra-spiritualism, pantheism, universal panpsychism, absolutism, objective idealism or biologic Platonism. This is probably preferable to the materialistic monism of most of their adversaries, who seem to ignore the revolution in physics since Victorian days. As between an adversary who admits only spirit and one who admits only matter, the Scholastic dualist will, of course, prefer the one who denies the lower and affirms the higher of his own two principles.

Among those who attempt to reduce the biological to the physico-chemical and who admit only a difference of degree, i. e., an accidental difference (as opposed to an essential difference in kind) between the living and the non-living are Democritus, Descartes, Holbach, La Mettrie, Cabanis, Vogt, Claude Bernard, Haeckel, Jacques Loeb, L. C. Hogben, Joseph Needham, Horatio H. Newman, T. H. Morgan, E. G. Conklin, H. C. Warren, Max Hartmann, Max Verworn, Julian Huxley, Bishop Barnes, Ray Lankester, Sir E. Schaefer and D'Arcy W. Thompson. Among these mechanists some refrain from philosophic speculation and confine themselves to methodology only. Others *consider the lilies of the field* and say *this is the law of the beast and of every living creature* but they deny that *all flesh is not the same flesh.*

On the other hand the totalitarian character of the living organism, its unitary wholeness as an *unum per se,* is stressed by many who are not precisely vitalists. "The central characteristic of living matter is its state of organised dynamic structure. This is obvious in all the larger forms of animal life, but it is equally true in so-called 'homogeneous' protoplasm," according to Dr. J. Gray.[5] The geologist, John Joly, writes:

[5] *Op. cit.*, p. 86.

"A living organism is a material structure which absorbs energy from its surroundings acceleratively." [6] Dr. Riddle admits that "in matter at the biological level, organization and interaction of molecular aggregates is of first importance." [7]

A novel theory is proposed by Gray and Bligh who follow the recent practice of physicists in finding parallels between the astronomic or macroscopic and the physical or microscopic by employing a binary star analogy. Vital phenomena are due, they hold, to a binuclear or binary atom. Life, they define, as "the constant chemical and physical interaction between binary or vital atoms and mononuclear or inorganic atoms of the environment." [8]

The manner in which organisms defy any increase in entropy, the confusion between equivocal and truly spontaneous generation (to employ the distinction made by Oscar Hertwig [9]) or as Bavink has it, "how it comes about that the organism always produces exactly the right catalyst at the right moment without the guiding mind of the chemist in his laboratory" [10]—these are mysteries which confront the mechanist. The claims made for the real existence of mitogenetic radiation may develop into another embarrassing difficulty.

S. T. Coleridge, in his posthumous *Theory of Life* (1848), expounds a type of universal panpsychism or biologic Platonism which much resembles current pantheism and is also akin to the views of Samuel Butler, recently resurrected by Joad. Butler seemed to believe in the existence of a cosmic stream of life, only fragments or rivulets of which were embodied in organisms. Joad invokes this doctrine to account for

[6] In a chapter contributed to *Science for a New World*, Crowther (ed.), (New York: 1934).
[7] *Op. cit.*, p. 44.
[8] *Op. cit.*, pp. 20, 23.
[9] In *Allgemeine Biologie* (Jena: 1923).
[10] *Op. cit.*, pp. 307, 328.

some of the findings of psychic research. Such an entity lacking all trace of individuation and comparable to the ether of Lodge's scheme of things or the life-force of Bernard Shaw, impresses us as arbitrary and gratuitous. There simply is no evidence of the existence of such a thing. To come back to Coleridge, however, he must be credited with an anticipation of the Lloyd Morgan-Samuel Alexander philosophy of emergent evolution. Coleridge's scale or hierarchy ranges from metals through crystals, geologic formations, plants, insects, and other animals up to man. Life, to him, consists in "unity in multeity produced *ab intra*" and polarity is the law of its action.

General Jan C. Smuts has advanced a speculative picture of nature termed "Holism." According to him, the ground and nisus of emergent and creative evolution is a drive toward synthesis, a tendency to the formation of systemic wholes as opposed to mere sum-totals or aggregates. Immanent, creative freedom is characteristic of reality. A thing is a synthesized event and an organism is a synthesized section of history. Piecemeal analysis of a mechanistic kind fails to explain the wholes which compose nature. Mechanism and vitalism should both be discarded. There is a continuous series from the atom through the molecule, the cell, the organism and mind up to personality. Matter, life and mind are distinct orders of fact although their boundaries are indefinite. Whitehead's philosophy of organism likewise requires the introduction of organic or biotic factors into the physico-chemical field, the atom being an organism. St. Thomas, who never confined his teleology to the living or mental levels (as Leibnitz and Kant did) but who taught that *omne agens agit propter finem,* would hardly be surprised that biologic categories were now being applied to physico-chemical data when evidence of a teleological kind is encountered within the latter. In other words, the teleological is wider in scope than the organic, but as long as the two are regarded as coeval and coextensive, in fact as synony-

mous, the mistake of describing minerals in terms of plants will be logical enough.

The mechanists, among whom Needham is an eloquent pleader, insist that the advances of biology have all been made along mechanistic lines. But as Thomson has observed, this justifies only a methodological materialism such as that of Lange. It does not warrant a translation of mechanistic method into materialistic doctrine. Yet most mechanists perpetrate precisely this blunder. Witness the attempt of the behaviorists to reduce psychology to physiology and their endeavor to explain all human behavior (including spontaneous processes such as blood circulation, impulsive and instinctive activities such as the flight of birds or the reproductive and nutritive reactions of beasts and brutes, as well as the voluntary operations of man, free and otherwise) in terms of such mechanical responses as tropisms and reflex-actions. T. V. Moore has demonstrated the truth that the so-called conditioned-reflexes involve volitional elements. Nor can the hysterical attack on instinct by Bernard be supported. Instinct is not a tendency or a faculty or an entity or any other mystical, occult, metaphysical factor, according to Bernard. We agree that for one who can admit nothing except the metrical and quantitative or who is committed to a purely phenomenistic position, consciousness must remain a fiction and instinct a myth. But "there are more things in heaven and earth than your philosophy dreams of, Horatio." Not everything in even the sub-human realm can be observed under the microscope or in the test-tube. Indeed the neurograms and reaction-patterns and conditioned-reflexes and tropisms are not without an element of mystery.

It is true that the synthesis of urea by Wöhler in 1828 was embarrassing to the older vitalism but we cannot concede to Needham that: "neo-vitalism is anthropomorphic animism; it is not metrical, not quantitative, not scientific." Nor can we admit that the terms "qualitative," "vitalistic" and "oc-

cult" are synonymous. Needham [11] has his modest moments and declares that "the old mechanism was scientific naturalism" but that "neo-mechanism lays no claim to philosophic validity" but he attacks those who do make such claims. Mechanists in general have a genuine phobia for the metaphysical and transcendental in any form to say nothing of the spiritual and supernatural. Scholasticism agrees with Needham in denying that the biologic story requires psychologic terms, as Thomson, E. S. Russell, Bavink and McDougall hold. This seems to us to be going too far in the direction opposite that of mechanism. McDougall, who prefers the term animism to vitalism, and the others above mentioned forget that a wide range of living things commonly known as animals as opposed to plants, live a life higher than the merely vegetative, in being conscious or mental or psychic. Even if the volvox cannot be easily catalogued as definitely plant or animal exclusively, the lion surely shows signs of mind which are quite lacking in the oak. Consequently we hold, as against the mechanists on the one hand and some of their adversaries on the other, for the real existence and distinctly separate status of at least four grades of being or levels of existence in nature.

Besides mind or consciousness, there are some purely biological differences between plants and animals. Thus some plants have chlorophyll while all animals lack it. Secondly, animals have an alimentary canal or digestive tract while plants have none. Thirdly, all animal cells are living, while plants contain some dead cells. Fourthly, animals are locomotive while plants are relatively stationary. Fifthly, only in plants do the protoplasts of cells have a surrounding wall. And lastly, while animal growth ceases at maturity, plant growth which is localized in complex places, continues indefinitely.

The successful extrapolation, extension or application of hylemorphism to the plants, the animals and man in vitalism,

[11] *The Sceptical Biologist* (New York: 1934).

animism and spiritualism, respectively, is not the least of the merits of the ancient theory of prime matter and substantial form. But the Neo-Scholastic practice of confining cosmology to the mineral kingdom and of treating all living things in psychology with its vegetative, sentient and rational divisions, amounts to placing greater emphasis on the gap between mineral and plant than on that between plant and animal, as though mind or consciousness were a criterion of some minor, inferior demarcation. It would seem, rather, that the gulf between mere vegetative life and mental life is as great as that between the former and mere physico-chemical existence on the mineral level.

One might also complain about the too simple definitions of life which are based on the contrast between self-motion and static, passive inertia. Phenomena such as Brownian movements and radioactivity, which are admittedly inorganic, would seem to frustrate any establishment of frontiers based upon these simple definitions.

While some of our Vitalistic colleagues seem to make more ado about the hiatus or lacuna between mineral and plant than they do about the vastly more important discontinuity between animal and man, nevertheless, in a general way, vitalistic views are more consonant with hylemorphism than are mechanistic doctrines. Vitalism teaches that there is an essential difference or distinction in kind between the plant and inorganic bodies. The mechanist maintains that the difference is only accidental or of degree. Organicism is a name that we may apply to those who explain the obvious superiority of plants to minerals in terms of organization. Now it is true that a living body is organized. The very name "organism" is indicative of this unitary integration or wholeness. But the point here is that organization is itself an effect that must be explained. Mere organization, moreover, can account for only accidental, not essential, differences. An army, for instance, is superior

in efficiency to a mob but it is not a choir of angels simply because its members are organized; it remains human. Even unicellular organisms are complex in structure and intricate in the composition of their carbon molecules. An organism is a systematic unification of several parts or factors. It involves a coordination of parts and a cooperation of functions. The human organism, for example, embraces several systems such as the osseous, muscular, respiratory, circulatory, digestive, reproductive and excretory systems. These systems in turn comprise diverse organs which, again, include various tissues and these are composed of cells. These microscopic bits of organized protoplasm contain two portions or regions known as the nucleus and the cytoplasm. Some multicellular organisms contain millions of cells.

The living cell converts extraneous, foreign matter into its very own substance. The growth process starts from within. This is true development, an unfolding from within. There is a fundamental difference between this process and the growth of a crystal, a snowball, icicle or any other inanimate object. In the latter case we have an accidental union, a superficial addition, an accretion from without instead of a transformation and assimilation from within. The crystal, which is often regarded as the highest form of inorganic matter, fails to display immanent activity. Immanent activity, as opposed to transitive (or transient) activity is that which is consummated in and by the agent or that which is productive of no external effect. Nutrition, growth and reproduction are instances of immanent activity and are characteristic of living organisms but are never encountered in crystals outside the laboratory, and even then, not entirely.

Living organisms originate movement of their own initiative, spontaneously. When injured they repair themselves; they heal their wounds. Organs are adapted to functions. Adjustments are made to cope with novel situations. In general, there is a

solidarity of behavior, a constant convergence of activity for the welfare of the organism as a whole. When organisms die (another thing that the mineral never does) the dynamic unity of life is conspicuously absent and a disintegration sets in, each molecule as it were, going into business for itself. During life the vital principle, that internal, immanent, directive, unifying factor or principle of orientation which we postulate to explain the above phenomena, was the source of that architectonic, hierarchic equilibrium which is life. No other account of the difference between a living and a dead organism or between a living organism and an inorganic, inanimate, physico-chemical body or substance seems to us adequate to sustain the test of critical examination.

DANIEL C. O'GRADY.

*University of Notre Dame.*

# SUBSTANCE AND ACCIDENT IN THE PHILOSOPHY OF DESCARTES

THE chief burden of this study is to present a detailed exposition of the treatment of substance and accident in the philosophy of Descartes. In writing it recourse has been had primarily not to what others say about Descartes, but rather, at Descartes' own instance, directly to his works:

Ce qui est si veritable, en cete matiere, que, bien que i'aye souuent expliqué quelques vnes de mes opinions a des personnes de tres bon esprit, & qui, pendant que ie leur parlois, sembloient les entendre fort distinctement, toutefois, lorsqu'ils ont redites, i'ay remarqué qu'ils les ont changées preque tousiours en telle sorte que ie ne les pouuois plus auouër pour mienes. A l'occasion de quoy ie suis bien ayse de prier icy nos neueux, de ne croire iamais que les choses qu'on leur dira vienent de moy, lorsque ie ne les auray point moy mesme diuulguées.[1]

The story of the beginning of Cartesian philosophy is familiar. Descartes seemed to consider the existing systems of philosophy, at least in their appeal to him, as relative and dubitable,[2] and so the foundations of science themselves as dubious. Perhaps, therefore, the existence and the nature of things, or substances, were unreal and unknowable.[3] Thus starting from a tentative,[4] methodical, and almost universal[5] doubt,[6] he purposed to establish a system of philosophy, per-

[1] *Discours de la Méthode* (part) VI; (volume) VI, (page) 69, (line) 24, (and following). References hereafter to the text of Descartes will be given in this way, the words in parentheses to be omitted. The edition of Adam and Tannery of Descartes' works (Paris: 1897-1913) is used throughout this study. The material for this study was gathered for a dissertation presented to the Graduate School of Arts and Sciences of the Catholic University of America in partial fulfillment of the requirements for the degree M. A.

[2] *Discours*, I; VI, 8, 18.

[3] *Ibid.*; VI, 8, 30.

[4] *Meditationes de Prima Philosophia*, I; VII, 18, 4.

[5] *Discours*, III; VI, 22, 16, ff. [6] *Ibid.*, IV; VI, 31, 27.

sonal and indubitable, whereby to direct his life, and whereon to found the validity of science and the reality of its subjects.[7] He did not, however, as is often presumed, recommend such a plan for universal adoption. For everyone he did not advocate his own disregard for authority.[8]

Though he should consider everything either to be dubious or to be false, though he should suppose some malignant genius bent with all his main on deceiving him, though he should esteem everything to be no more than the fabrication of a dream, or even not to exist, there was one thing of which Descartes could in no wise doubt, which could be neither a deception, nor a falsehood, nor a dream, which could not but be certain and true. If he thought, if he doubted, if he were persuaded, if he were deceived, he must necessarily exist. This certitude then, *je pense, donc je suis*, was the first irrefragable principle of his philosophy.

Mais, aussitost aprés, ie pris garde que, pendant que ie voulois ainsi penser que tout estoit faux, il falloit necessairement que moy, qui le pensois, fusse quelque chose. Et remarquant que cete verité: *ie pense, donc ie suis*, estoit si ferme & si assurée, . . . ie iugay que ie pouuois la receuoir, sans scruple, pour le premier principe de la Philosophie, que ie cherchois.[9]

Sed mihi persuasi nihil plane esse in mundo, nullum coelum, nullam terram, nullas mentes, nulla corpora; nonne igitur etiam me non esse? Imo certe ego eram, si quid mihi persuasi. Sed est deceptor nescio quis, summe potens, summe callidus, qui de industria me semper fallit. Haud dubie igitur ego etiam sum, si me fallit; & fallat quantum potest, nunquam tamen efficiet, ut nihil sim quamdiu me aliquid esse cogitabo.[10]

Then because he had a clear and distinct idea of the undeniable fact of his existence as a thinking being, Descartes estab-

[7] *Ibid.*, I; VI, 15, 4. Cf. *Med.*, I; VII, 17, 1-8.
[8] *Discours*, II; VI, 15, 8.
[9] *Discours*, IV; VI, 32, 15. Cf. *Med. Synopsis*, VII, 12, 10. *Med.*, II; VII, 33, 11. *Ibid.*, III; VII, 36, 15.
[10] *Med.*, II; VII, 25, 2.

lished a clear and distinct idea of a fact as a criterion for its certitude:

Aprés cela, ie consideray en general ce qui est requis a vne proposition pour estre vraye & certaine; . . . ie iugay que ie pouuois prendre pour reigle generale, que les choses que nous conceuons fort clairement, & fort distinctement, sont toutes vrayes. . . .[11]

But what was he? It is the very question which in the second *Meditation* he asked and answered:

Sed quid igitur sum? Res cogitans. Quid est hoc? Nempe dubitans, intelligens, affirmans, negans, volens, nolens, imaginans quoque, & sentiens.[12]

Descartes then was certain of two facts: first of himself as existing, and second of his existence as a thinking *thing* or *being,* "Sum autem res vera, & vere existens; sed qualis res? Dixi, cogitans."[13] He repeated in the third Meditation:

Ego sum res cogitans id est dubitans, affirmans, negans, pauca intelligens, multa ignorans, volens, nolens, imaginans etiam & sentiens. . . .[14]

There could be no doubt that he was the being who, though nothing else existed, thought, that was, had imaginations, and had sensations; of these powers he was certain, and certain in considering them a part of his thought, or more exactly, modes of his thinking:

Sed vero etiam ego idem sum qui imaginor; nam quamvis forte, ut supposui, nulla prorsus res imaginata vera sit, vis tamen ipsa imaginandi revera existit, & cogitationis meae partem facit.[15]

quamvis illa quae sentio vel imaginor extra me fortasse nihil sint, illos tamen cogitandi modos, quos sensus & imaginationes appello, quatenus cogitandi quidam modi tantum sunt, in me esse sum certus.[16]

---

[11] *Discours,* IV; VI, 33, 12. Cf. *Med. Syn.,* VII, 15, 3.
[12] *Med.,* II; VII, 28, 20.
[13] *Med.,* II; VII, 27, 15.
[14] *Med.,* III; VII, 34, 18. Cf. *Ibid.*; VII, 35, 6.
[15] *Med.,* II; VII, 29, 7. Cf. *Ibid.*; VII, 29, 11.
[16] *Med.,* III; VII, 34, 21.

In his *Principia* he stated again more precisely what he meant by thought: any modification of consciousness, that was, for him to know, to imagine, to have sensations.[17]

Repeatedly then he maintained the certainty of his existence as a thinking thing or being, and called himself mind or intellect, though at first he pleaded ignorance as to their exact meaning.[18] But later, in view of the fact that already in the intuition or in the examination of the *cogito* he had as well intuited clearly and distinctly as "per se notas"[19] the necessity, truth, and certainty of all such general axioms as: "Is qui cogitat, non potest non existere dum cogitat; Impossible est idem simul esse & non esse; Ex nihilo nihil fit," it was easy for him in his *Response to the Third Objections* to explain that by mind and intellect he meant not mere faculties, but a being endowed with faculties:

> Ubi dixi, *hoc est mens*, animus, intellectus, ratio, &c., non intellexi per ista nomina solas facultates, sed res facultate cogitandi praeditas. . . .[20]

Thought required a thinking subject:

> Deinde recte dicit *nos non posse concipere actum ullum sine subjecto suo*, ut cogitationem sine re cogitante, quia id quod cogitat non est nihil.[21]

And this thinking subject, or existing self, he expressly called a substance, "cum mens sit res cogitans, est praeter cogitationem adhuc substantia quae cogitat . . . ,"[22] "inde intellexi me esse rem quandam sive substantiam. . . ."[23] What precisely Descartes meant by the general term substance he stated

[17] *Principia Philosophiae*, I; VIII, 7, 20.
[18] *Med.*, II; VII, 27, 12.
[19] *IIae Responsiones*; VII, 162, 28.
[20] *IIIae Resp.*; VII, 174, 4.
[21] *Ibid.*; VII, 175, 6. Cf. *Ibid.*; VII, 175, 26.
[22] *Entretien avec Burman*; V, 156.
[23] *Discours*, IV, *Lat. transl.*; VI, 558. Cf. *Med. Syn.*; VII, 14, 9. *Med.*, III; VII, 44, 23., 45, 20., 48, 13.

at length only in the *Principia*; suffice it thus far in the development of his thought, as it suffered for him, to be content with the passing explanation of the third *Meditation*, "substantiam, sive esse rem quae per se apta est existere . . .".[24]

Descartes was convinced of his own existence as a thinking substantial being, while he thought. Was this substantial being permanent ? What essentially was it? It seems that he could be certain of his permanent existence only while he thought:

cogitatio est; haec sola a me divelli nequit. Ego sum, ego existo; certum est. Quandiu autem? Nempe quandiu cogito; nam forte etiam fieri potest, si cessarem ab omni cogitatione, ut illico totus esse desinerem.[25]

Therefore he inferred that he was a substance whose whole essence or nature consisted only in thought, or entirely in his existence as a thinking being:

au lieu que, si i'eusse seulement cessé de penser, encore que tout le reste de ce que i'auois iamais imaginé, eust esté vray, ie n'auois aucune raison de croire que i'eusse esté; ie connu de la que i'estois vne substance dont toute l'essence ou la nature n'est que de penser. . . .[26]

ac proinde, ex hoc ipso quod sciam me existere, quodque interim nihil plane aliud ad naturam sive essentiam meam pertinere animadvertam, praeter hoc solum quod sim res cogitans, recte concludo meam essentiam in hoc uno consistere, quod sim res cogitans.[27]

Moreover if the essence of his mind was thought, and he could not but be convinced of his permanence, he concluded the mind must always be in the process of thinking:

ce qui constituë la nature d'vne chose est tousiours en elle, pendant qu'elle existe; en forte qu'il me seroit plus aisé de croire que l'ame cesseroit d'exister, quand on dit qu'elle cesse de penser, que non pas de conceuoir qu'elle fust sans pensée.[28]

---

[24] *Med.*, III; VII, 44, 22.
[25] *Med.*, II; VII, 27, 8. Cf. *Ibid.*; VII, 25, 10.
[26] *Discours*, IV; VI, 32, 31.
[27] *Med.*, VI; VII, 78, 8.
[28] (Letter) *To Gibeuf*; III, 478, 18. Cf. *To Arnauld*; V, 193, 3.

Although, as has been seen above, he insisted that thought demanded a thinking subject, yet Descartes seems in a manner guilty of the charge of identifying with this thinking nature or subject and of considering as the same reality, though under a different aspect, thought or thinking. It is apparent in a comparison of his answer to an objection of Arnauld and his response to the third *Objections to the Meditations*; by *cogitatio* in the first instance he meant evidently a substance, in the second an action or mode of this substance:

*Quî fieri possit, vt cogitatio constituat mentis essentiam, cum mens substantia, cogitatio vero entitas modalis tantum esse videatur?* (Arnauld)[29] ita cogitatio, siue natura cogitans, in qua puto mentis humanae essentiam consistere, longe alius est, quam hic vel ille actus cogitandi. . . . Per cogitationem igitur non intelligo vniuersale quid, omnes cogitandi modos comprehendens, sed naturam particularem, quae recipit omnes illos modos, vt etiam extensio est natura, quae recipit omnes figuras. (Descartes)[30]

Non nego me, qui cogito, distingui a mea cogitatione, ut rem a modo; sed ubi quaero, *quid ergo est quod a mea cogitatione distinguatur,* hoc intelligo de variis cogitandi modis ibi recensitis. . . .[31]

Descartes' idea of the mind or soul as a being whose whole essence was thought, or of a mind identical with thought has been well expressed and formulated by de Fries:

Nach Descartes besteht das Wesen der Seele im Denken. . . . Bezeichnet man die Modi des cogitare mit $a + \beta$, das cogitare mit $a$ und die Seelensubstanz mit *ps*, so ergiebt sich folgende Constitutionsformel $ps = (a = a + \beta)$, oder kurz: $ps = a$, in Worten: mens = cogitare. Das cogitare erschöpft das ganze Wesen der Seele; hier bleibt also kein uncognoschirbarer Rest des geistigen Wesens. Jenes cogitare ist der adäquate Ausdruck für das Wesen der Seele, für die Seele selbst. . . . Enthält die Vorstellung der Seele bei Descartes wesentlich nur ein Einfaches und intuitiv Bekanntes. . . .[32]

---

[29] *Arnauld to Descartes*; V, 213, 25. [30] *To Arnauld*; V, 221, 14.

[31] *IIIae Resp.*; VII, 177, 15. Cf. *Princ. Phil.*, I; VIII, 31, 13.

[32] Aug. de Fries, *Die Substanzenlehre John Lockes mit Beziehung auf die Cartesianische Philosophie* . . . (Bremen, 1879), pp. 23, 27. *passim.*

As has been shown, Descartes believed his self to be nothing other than in essence a thinking, permanent, independent being, or substance. Now this substance, mind, or soul, was immaterial, and contained or demanded no element of the corporeal:

au lieu que ie n'en sers pour faire connoistre que ce *moy*, qui pense, est *vne substance immaterielle*, & qui n'a rien de corporel. . . .[33]

Moreover the soul was a spiritual substance, and possessor of all the properties of spiritual substances, whatsoever they might be.[34] It was not extended, "nullas substantias incorporeas proprie esse extensas." [35] It was indivisible, "Falsum etiam est, . . . *aliquam substantiam cogitantem esse partibilem* . . . ;[36] it was immortal, "mentem ex natura sua esse immortalem." [37]

The second being or substance of which Descartes had any assurance was God.[38] Examining the nature of his own thought, or doubt, he perceived evidently and intuitively his own imperfection; to afford the comparison he concluded there must exist in him the idea of some being more perfect than himself, the only and therefore the most perfect being he had up to that time recognized.

En suite de quoy, faisant reflexion sur ce que ie doutois, & que, par consequent, mon estre n'estoit pas tout parfait, car ie voyois clairement que c'estoit vne plus grande perfection de connoistre que de douter, ie m'auisay de chercher d'ou i'auois appris a penser a quelque chose de plus parfait que ie n'estois; & ie connu euidenment que ce deuoit estre de quelque nature qui fust en effect plus parfaite.[39]

But the idea of a more perfect being must have been put into his mind by this being itself, since Descartes neither did

[33] *To* * * *; III, 247, 9. Cf. *To* * * *; I, 353, 16. *Vae Resp.*; VII, 354, 28. *Princ. Phil.*, I; VIII, 7, 11.
[34] *To Mersenne*; III, 396, 16.
[35] *To Morus*; V, 270, 15. Cf. *Ibid.*; V, 269, 28.
[36] *Notae, VIIae Obj.*; VII, 520, 10.
[37] *Med. Syn.*; VII, 14, 16.
[38] Cf. Étienne Gilson, *Index scolastico-cartésien* (Paris, 1913), pp. 69 ff.
[39] *Discours*, IV; VI, 33, 25.

nor could cause it to be there. Therefore this more perfect being must exist.

Nempe si realitas objectiva alicujus ex meis ideis sit tanta ut certus sim eandem nec formaliter nec eminenter in me esse, nec proinde me ipsum ejus ideae causam esse posse, hinc necessario sequi, non me solum esse in mundo, sed aliquam aliam rem, quae istius ideae est causa, etiam existere.[40]

Such more perfect being must have all the perfections of which he, Descartes, could have any idea. This being he called God.

De façon qu'il restoit qu'elle (the idea of a being more perfect than himself) eust esté mise en moy par vne nature qui fust veritablement plus parfaite que ie n'estois, & mesme qui eust en soy toutes les perfections dont ie pouuois auoir quelque idée, c'est a dire, pour m'expliquer en vn mot, qui fust Dieu.[41]

Now by God, he explained in the third *Meditation*, he meant an infinite being or substance: "Dei nomine intelligo substantiam quandam infinitam." [42] Only the Infinite [43] therefore could give him an idea of the Infinite, and so, as has been said, the Infinite, or God, must exist.[44] He seemed to maintain for the notion of God some kind of priority even to the notion of himself, "priorem quodammodo in me esse perceptionem infiniti quam finiti, hoc est Dei quam mei ipsius." [45]

Besides inferring the existence of a perfect substance, or God, from the *idea* of his own imperfect and limited being, from the *fact* of this imperfection, limitation, and dependence he also inferred the existence of God.[46] God's existence was proved by the aid of the self-evident principle of causality, "ad causam ultimam deveniatur, quae erit Deus." [47] Indeed the fact and content of the very idea of God demanded His

[40] *Med.*, III; VII, 42, 18.
[41] *Discours*, IV; VI, 34, 19.
[42] *Med.*, III; VII, 45, 11.
[43] *Iae Resp.*; VII, 113, 2.
[44] *Med.*, III; VII, 65, 19.
[45] *Ibid.*; VII, 45, 28.
[46] *Discours*, IV; VI, 34, 24.
[47] *Med.*, III; VII, 50, 6.

existence, "On ne peut distinguer en Dieu l'essence de l'existence." [48] And this idea of God was innate, potentially so, in the sense that Descartes could form it immediately just as he formed the idea of his own existence in the *je pense, donc je suis.*[49]

Indubitably then this second or infinite substance, God, existed. What then was He like? What was the nature or essence of this infinite substance? Already Descartes had said that He was infinite, that was, possessed of no limits to His perfection:

*Per infinitam substantiam, intelligo substantiam perfectiones veras & reales actu infinitas & immensas habentem.* . . . Et il faut remarquer que ie ne me sers iamais du mot *d'infini* pour signifer seulement n'auoir point de fin, ce qui est negatif & a quoy i'ay appliquê le mot d'*indefini*, mais pour signifer vne chose réelle, qui est incomparablement plus grande que toutes celles qui ont quelque fin.[50]

God possessed all perfections, whose depths human thought could never plumb; He had no defects, nothing of the merely potential.[51] He was infinite, eternal, omniscient, and omnipotent; [52] immense, incomprehensible in His infinity; [53] independent, and complete,[54] an *ens a se*; [55] one, simple, and indivisible; [56] immutable,[57] necessary, and eternal.[58]

All things else, if there were any such besides Descartes' own imperfect, substantial, thinking being, must then be imperfect, and depend for every moment of their existence on this one supremely perfect Being:

mais que s'il y auoit quelques cors dans le monde, ou bien quelques intelligences, ou autres natures, qui ne fussent point toutes parfaites,

---

[48] Cf. Étienne Gilson, *op. cit.*, p. 78. *Discours*, IV; VI, 36, 22. *Med.*, IV; VII, 53, 13, and 69, 7.

[49] *Med.*, III; VII, 51, 6, and 19.

[50] *To Morus*; V, 355, 22.

[51] *Med.*, III; VII, 47, 11, and 52, 3.

[52] *Iae Resp.*; VII, 110, 22 ff., passim.

[53] *Discours*, IV; VI, 35, 4.

[54] *Med.*, IV; VII, 55, 20.

[55] *Ibid.*; VII, 53, 11.

[56] *Med.*, III; VII, 50, 16. Cf. *Discours*, IV; VI, 35, 24.

[57] *Princ. Phil.*, II; VIII, 61, 22.

[58] *Med.*, V; VII, 68, 17.

leur estre deuoit dependre de sa puissance, en telle sorte qu'elles ne pouuoient subsister sans luy vn seul moment.[59]

God was, as has been maintained, a Being *a se*, and a substance; all else depended on Him:

Et quidem substantia quae nulla plane re indigeat, unica tantum potest intelligi, nempe Deus. Alias vero omnes, non nisi ope concursus Dei existere posse percipimus.[60]

God was the Creator and Conserver of all, for creation and conservation differed only in reason.[61] Descartes could now account fully for the existence of his own substantial, thinking being, and for all existence, if there existed anything besides himself.[62]

It was evident too, by the natural light of reason, or infallible intuition, that God, being infinitely perfect, could not be a deceiver, "Ex quibus satis patet illum fallacem esse non posse; . . . lumine naturali manifestum est." [63] On the veracity of God, therefore, Descartes founded the absolute veracity of his own indubitable clear and distinct ideas; they were of that nature of his, whose author was the undeceiving God.[64]

Once however, Descartes, much as he seemed to identify the thinking subject with thinking, or thought, seemed too to identify God, conceived perhaps as in action, with the coördination of creation, or with coördinated creation itself, that is, with nature:

per naturam enim, generaliter spectatam, nihil nunc aliud quam vel Deum, ipsum, vel rerum creatarum coordinationem a Deo institutam intelligo. . . .[65]

Descartes had also to determine whether a third class of

[59] *Discours*, IV; VI, 35, 29.
[60] *Princ. Phil.*, I; VIII, 24, 23.
[61] *Discours*, V; VI, 45, 8. *Med.*, III; VII, 49, 9.
[62] *Med.*, III; VII, 45, 13. *Ibid.*, IV; VII, 53, 15.
[63] *Med.*, III; VII, 52, 6. Cf. *Ibid.*, IV; VII, 53, 23, and *Ibid.*, V; VII, 70, 10.
[64] *Discours*, IV; VI, 38, 15. *Med.*, IV; VII, 62, 15.
[65] *Med.*, VI; VII, 80, 21.

substances, material things, really existed: "Reliquum est ut examinem an res materiales existant." [66] But no sane man, he believed, ever doubted their existence. He purposed, however, to arrange a demonstration; yet only to show its notion to be less clear and solid than those required for a knowledge of himself or of God:

*rationes omnes ex quibus rerum materialium existentia possit concludi, afferuntur: non quod eas valde utiles esse putarim ad probandum id ipsum quod probant, nempe revera esse aliquem mundum & homines habere corpora, & similia de quibus nemo unquam sanae mentis serio dubitavit; sed quia, illos considerando, agnoscitur non esse tam firmas nec tam perspicuas quam sunt eae, per quas in mentis nostrae & Dei cognitionem devenimus. . . .*[67]

At least he could in no wise deny that he, Descartes, had ideas of these material or corporeal things:

Puis, outre cela, i'auois des idées de plusieurs choses sensibles & corporelles: . . . ie ne pouuois nier toutefois que les idées n'en fussant veritablement en ma pensée.[68]

And he was sure too that such things as he conceived might by the infinite power of God exist: "Non enim dubium est quin Deus sit capax ea omnia efficiendi quae ego sic percipiendi sum capax. . . ." [69] Then from an analysis of the process of imagination, which he considered to be an apparent application of the cognitive faculty to an intimately present body, he concluded the probable, though not necessary existence of such bcdies:

Praeterea ex imaginandi facultate, qua me uti experior, dum circa res istas materiales versor, sequi videtur illas existere; nam attentius consideranti quidnam sit imaginatio, nihil aliud esse apparet quam quaedam applicatio facultatis cognoscitivae ad corpus ipsi intime praesens, ac proinde existens.[70]

---

[66] *Med.*, VI; VII, 71, 13.
[67] *Med. Syn.*; VII, 15, 26.
[68] *Discours*, IV; VI, 35, 17.
[69] *Med.*, VI; VII, 71, 16.
[70] *Med.*, VI; VII, 71, 20.

Facile, inquam, intelligo imaginationem ita perfici posse, siquidem corpus existat; & quia nullus alius modus seque conveniens occurrit ad illam explicandam, probabiliter inde conjicio corpus existere; . . . sed probabiliter tantum. . . .[71]

But could the ideas present to him as the result of sense perception afford a conclusive argument for the existence of corporeal things? If at first they seemed to demand nothing other than the power of his own mind to fabricate them, analysis of self, however, seemed to require their origin from without. Some thing or things other than himself must exist?

Quantum autem ad ideas rerum corporalium, nihil in illis occurrit, quod sit tantum ut non videatur a me ipso potuisse proficisci. . . .[72]

ideae sensu perceptae . . . fieri non posse videbatur ut a meipso procederent; ideoque supererat ut ab aliis quibusdam rebus advenirent.[73]

That God existed Descartes knew; either God then, or some unknown faculty of Descartes', or some other existing being or beings caused these ideas in him.[74] But God would in no wise deceive him, neither immediately, nor mediately through an unknown faculty. Descartes was therefore justified in concluding corporeal things really existed:

Atqui, cum Deus non sit fallax, omnino manifestum est illum nec per se immediate istas ideas mihi immittere, nec etiam mediante aliqua creatura, in qua rerum realitas objectiva, non formaliter, sed eminenter contineatur. Cum enim nullam plane facultatem mihi dederit ad hoc agnoscendum, sed contra magnam propensionem ad credendum illas a rebus corporeis emitti, non video qua ratione posset intelligi ipsum non esse fallacem, si aliunde quam a rebus corporeis emitterentur. Ac proinde res corporeae existunt.[75]

De Fries puts it thus:

für das Dasein einer realen Welt. . . . Descartes muss deshalb, um dieses zu erweisen, seine Zuflucht zur veracitas Dei nehmen. . . . Locke

[71] *Ibid.*; VII, 73, 20, and 73, 25.
[72] *Med.*, VI; VII, 75, 14.
[73] *Med.*, III; VII, 43, 10.
[74] *Med.*, VI; VII, 79, 6.
[75] *Med.*, VI; VII, 79, 22. Cf. *Princ. Phil.*, I; VIII, 40, 5.

erhebt demnach die Empfindung zum Erkenntnissgrunde der Existenz eines Seins ausser uns. Descartes thut dies freilich auch in seiner Maxime: sane non dubium est, quin ea omnia, quae doceor a natura aliquid habeant veritatis (Med 6a); allein diese Maxime hat bei ihm erst Geltung auf Grund der veracitas Dei. . . .[76]

Did his ideas of corporeal reality however conform to this reality? As an indicative fact they seemed to arise independently of his control:

quaenam me moveat ratio ut illas istis rebus similes esse existimem. Nempe ita videor doctus a natura. Et praeterea experior illas non a mea voulntate nec proinde a me ipso pendere. . . .[77]

It appeared that color, sound, smell, and taste, heat and hardness, demanded corresponding, though not similar varieties in the objects themselves.[78] Yet the veracity of God prevented the entire falsity of his ideas, and offered some hope for obtaining truth in them:

quod Deus non sit fallax, quodque idcirco fieri non possit ut ulla falsitas in meis opinionibus reperiatur, nisi aliqua etiam sit in me facultas a Deo tributa ad illam emendendam, certam mihi spem ostendit veritatis etiam in iis assequendae.[79]

So Descartes cast aside as worthy of ridicule the hyperbolic doubts of former days; his senses were more often right than wrong; memory too and intellect kept guard in the watch tower of truth.[80] Still he must beware of concluding from ideas formed from sense perception the essence of these corporeal things. He could know essences at first only obscurely and confusedly.[81] But he did come to know the essence of material things; soon it will be apparent how, and with what results.

[76] Aug. De Fries, *op. cit.*, p. 56, 57, passim.

[77] *Med.*, III; VII, 38, 13. Cf. *Med.*, VI; VII, 80, 4. *Med.*, III; VII, 37, 22.

[78] *Med.*, VI; VII, 81, 18.

[79] *Med.*, VI; VII, 80, 15. Cf. *Ibid.*; VII, 77, 29.

[80] *Med.*, VI; VII, 89, 11.

[81] *Med.*, VI; VII, 83, 14.

Of all these bodies there was one which he felt most properly and in an especial way to belong to himself, "corpus illud, quod speciali quodam jure meum appellabam, magis ad me pertinere quam alia ulla arbitrabar." [82] Most expressly and almost infallibly his nature taught him that for certain he had a body, "Nihil autem est quod me ista natura magis expresse doceat, quam quod habeam corpus. . . ." [83] Moreover his nature dictated indubitably that besides his own body there existed yet other bodies, "Praeterea etiam doceor a natura varia circa meum corpus alia corpora existere. . . ." [84]

He had in addition a distinct idea of his and other bodies as extended things and as substances: "distinctam ideam corporis, quatenus est tantum res extensa, non cogitans, . . ."; [85] "corpus quidem in genere sumptum esse substantiam. . . ." [86] Descartes made use of the celebrated example of the wax. Every sensible quality at one moment or another seemed capable of disappearing, yet the wax was never conceded to have disappeared:

> Sumamus, exempli causa, hanc ceram: . . . omnia denique illi adsunt quae requiri videntur, ut corpus aliquod possit quam distinctissimi cognosci. Sed ecce, dum loquor, igni admovetur. . . . Remanetne adhuc eadem cera? Remanere fatendum est; nemo negat, nemo aliter putat. Quid erat igitur in ea quod tam distincte comprehendebatur? Certe nihil eorum quae sensibus attingebam; nam quaecunque sub gustum, vel odoratum, vel visum, vel tactum, vel auditum veniebant, mutata jam sunt: remanet cera.[87]

Evidently then he might conclude its nature depended on none of those varying sensible qualities, "a nulla ex illis ejus

[82] *Med.*, VI; VII, 75, 30.
[83] *Med.*, VI; VII, 80, 27. Cf. *Med.*, VI; VII, 78, 13.
[84] *Med.*, VI; VII, 81, 15.
[85] *Med.*, VI; VII, 78, 18.
[86] *Med. Syn.*; VII, 14, 5. Cf. *Princ. Phil.*, I; VIII, 23, 6, and VIII, 25, 30.
[87] *Med.*, II; VII, 30, 8.

naturam dependere." [88] But there was one characteristic which remained—a kind of mutable and flexible extension:

attendamus, &, remotis iis quae ad ceram non pertinent, videamus quid supersit: nempe nihil aliud quam extensum quid, flexibile, mutabile.[89]

Extension then must constitute the nature and essence of corporeal substance. To it might all other qualities be referred:

sed una tamen est cujusque substantiae praecipua proprietas, quae ipsius naturam essentiamque constituit, & ad quam aliae omnes referuntur. Nempe extensio in longum, latum & profundum, substantiae corporeae naturam constituit. . . .[90]

Examine the nature of a stone, and the same conclusion must be arrived at. Hardness, color, weight, cold, and heat might go, but extension alone, while a body remained, remained always.[91] The nature of matter in general then consisted in extension:

percipiemus naturam materiae, sive corporis in universum spectati, non consistere in eo quod sit res dura, vel ponderosa, vel colorata, vel alio aliquo modo sensus afficiens: sed tantum in eo quod sit res extensa in longum, latum & profundum.[92]

Since Descartes felt sure that extension constituted the essence and nature of matter—or corporeal substance, he seemed to identify extension and corporeal substance, much as he identified thought or thinking and the thinking substance or mind:

Cogitatio & extensio spectari possunt ut constituentes naturas substantiae intelligentis & corporeae; tuncque non aliter concipi debent, quam ipsa substantia cogitans & substantia extensa, hoc est, quam mens & corpus. . . .[93]

Between them he appeared to admit only a distinction of reason: " in abstrahenda notione substantiae a notionibus cogitationis vel extensionis, quae scilicet ab ipsa ratione tantum

[88] *Princ. Phil.*, II; VIII, 42, 21.
[89] *Med.*, II; VII, 30, 31.
[90] *Princ. Phil.*, I; VIII, 25, 13. *Cf. IIae Resp.*; VII, 161, 28.
[91] *Princ. Phil.*, II; VIII, 46, 4.
[92] *Princ. Phil.*, II; VIII, 42, 4. [93] *Princ. Phil.*, I; VIII, 30, 26.

diversae sunt." [94] One could not truly distinguish quantity or extension (practically synonymous terms) from corporeal substance, " Quippe quantitas a substantia extensa in re non differt, sed tantum ex parte nostri conceptus, ut & numerus a re numerata." [95] To distinguish them, and thus to consider extension or quantity as some kind of accident was to comprehend corporeal substance by some confused idea of incorporeal (or unextended) substance; it was to express in words quite the contrary of what one conceived.[96] Body then was to be defined by the note of extension, " ita corpus non definire per impenetrabilitatem, sed per extensionem." [97]

It seems then from what has been said that Descartes maintained quantity or extension to constitute the nature of corporeal substance or corporeal substance itself, just as thought or thinking seemed to constitute incorporeal substance. Any addition of quantity or extension constituted an addition of substance; any diminution of the latter, and proportionately quantity and extension disappeared:

In re autem fieri non potest, ut vel minimum quid ex ista quantitate aut extensione tollatur, quin tantundem etiam de substantia detrahatur; vel vice versa, ut tantillum de substantia detrahatur, quin tantundem de quantitate ac extensione tollatur.[98]

Need it be repeated that Descartes had a clear and distinct idea of corporeal substance as extension? Now sense information afforded no clear and distinct ideas, nor was it altogether reliable. The clear and distinct idea was formed only by the intellect, and it alone afforded absolute certitude. Therefore Descartes' clear and distinct idea of the essence of bodies as extension was attained and attainable only by the intellect; and moreover it was undeniably valid:

[94] *Ibid.*; VIII, 31, 6.
[95] *Princ. Phil.*, II; VIII, 44, 19.
[96] *Princ. Phil.*, II; VIII, 45, 8.
[97] *To Morus*; V, 269, 15.
[98] *Princ. Phil.*, II; VIII, 45, 2, and cf. VIII, 44, 14.

ipsamet corpora, non proprie a sensibus, vel ab imaginandi facultate, sed a solo intellectu percipi, nec ex eo percipi quod tangantur aut videantur, sed tantum ex eo quod intelligantur. . . .[99]

De Fries sums up and formulates the substance of Descartes thought thus:

Die Vorstellungen körperlicher Substanzen erhalten wir nach Descartes durch einen Schluss von den uns afficierenden Qualitäten nach der schon erwähnten notio communis: nihili nulla sunt attributa, nullaeve proprietas, aut qualitates, denn allein dadurch, dass Substanzen existieren, können sie nicht erkannt werden, quia hoc solum per se non afficit. (Princ. philos I, 52.) Nun ward zwar ex quolibet attributo substantia erkannt, sed una tamen est cuiusque substantiae praecipua proprietas, quae ipsius naturam essentiamque constituit, et ad quam aliae omnes referuntur. (Ibid. I, 53.) So bildet die Extensio in longum, latum et profundum substantiae corporeae naturam (Ibid.). Bezeichnen wir demnach die vielen Accidenzen mit $\alpha + \beta$, das Attribut der Ausdehung mit $a$, so ergiebt sich fur die Constitution der körperlichen Substanzen $k$ der Ausdruck $k = (a = a + \beta)$, oder kurzer: $k = a$, in Worten: Substantia corporea = extensio. In der Descartes' schen Vorstellung, der korperlichen Substanz ist mithin kein Unbekanntes enthalten, auch ist sie im Grunde ein einfache Vorstellung.[100]

Descartes used interchangeably the terms: extended thing—body—or matter, " Estque haec res extensa, quam corpus sive materiam appellamus." [101] He spoke too of the possibility of a corporeal substance indefinitely extended, and said even that he knew this whole universe to be such a single extended substance, " Cognoscimus praeterea hunc mundum, sive substantiae corporeae universitatem, nullos extensionis suae fines habere." [102] The whole universe was made up of one matter or material, and this extended.[103]

[99] *Med.*, II; VII, 34, 1.
[100] Aug. De Fries, *op. cit.*, p. 29.
[101] *Princ. Phil.*, I; VIII, 41, 12. Cf. *To Elizabeth*; III, 691, 23.
[102] *Princ. Phil.*, II; VII, 52, 3 and 8.
[103] *Ibid.*; VIII, 52, 22.

Every corporeal or extended thing, or matter as a whole was capable of division into parts.[104] It was capable of this division by motion,[105] according to each single potential part, or according to groups of potential or actual parts, or bodies.[105] Descartes maintained that all bodies,[105] all properties, all varieties, and all forms of bodies arise from a universal matter by motion imparted to its infinite potentially or actually separated parts:

Omnesque proprietates, quas in ea clare percipimus, ad hoc unum reducuntur, quod sit partibilis, & mobilis secundum partes, & proinde capax illarum omnium affectionum, quas ex ejus partium motu sequi posse percipimus . . . omnis materiae variatio, sive omnium ejus formarum diversitas, pendet a motu.[106]

Bodies then or corporeal substances were, as was indicated above, only parts of the one universal matter or substance, or else they were groups of the infinite parts of this one matter which moved together:

Ubi per *unum corpus*, sive *unam partem materiae*, intelligo id omne quod simul transfertur; etsi rursus hoc ipsum constare possit ex multis partibus, quae alios in se habeant motus.[107]

So if Descartes called this one universal matter substance, he might call each natural body a substance too. No reason for not so doing was apparent. Material substances then were parts or groups of parts of extended matter:

nam, quantum ad nos, qui eam (matter) veram & completam substantiam esse putamus, non video cur corpus naturale esse negaremus.[108]

Bodies, or substances, and their varying properties were effected

[104] *Med.*, VI; VII, 86, 10.

[105] *Princ. Philos.*, II; VIII, 53, 26: Movement and body were defined as, "*translationem unius partis materiae, sive unius corporis ex vicinia eorum corporum, quae illud immediate contingunt & tanquam quiescentia spectantur, in viciniam aliorum.* Ubi per *unum* corpus, sine *unam Partem Materiae*, intelligo id omne quod simul transfertur. . . ."

[106] *Princ. Phil.*, II; VIII, 52, 24.

[107] *Ibid.*; VIII, 53, 29.

[108] *To Regius*; III, 565, 15.

solely by motion in or to certain of the parts of the one universal matter:

corpus humanum, quatenus a reliquis differt corporibus, non nisi ex certa membrorum configuratione aliisque ejusmodi accidentibus esse conflatum. . . .[109]

This motion in the universe was at a constant rate; God who was the prime mover, by grace of His creative or conservative powers moved now through secondary causes: material bodies, or "egos" (substances all).

Motus natura sic animadversa, considerare oportet ejus causam, eamque duplicem: primum scilicet universalem & primariam, quae est causa generalis omnium motuum qui sunt in mundo; ac deinde particularem, a qua fit ut singulae materiae partes motus, quos prius non habuerunt, acquirant.[110]

Yet God, the infinite substance, Descartes expressly stated, must not in any way be taken as a pantheistic world-soul:

Vis autem mouens potest esse ipsius Dei conseruantis tantumdem translationis in materia, quantum a primo creationis momento in ea posuit; vel etiam substantiae creatae, vt mentis nostrae, vel cuiusuis alterius rei, cui vim dederit corpus mouendi. Et quidem illa vis in substantia creata est eius modus, non autem in Deo; quod quia non ita facile ab omnibus intelligi, nolui de ista re in scriptis meis agere, ne viderer fauere eorum sententiae, qui Deum, tanquam animam mundi materiae vnitam, considerant.[111]

It is now sufficiently evident that Descartes established the existence, and investigated the nature of three kinds of beings, or things, or substances. But what precisely and in general did he mean by the term substance? At least four times he used as synonymous with *substantia* the usual Latin *res* (the English thing, or something-or-other). Descartes wrote for example: "rem quandam sive substantiam,"[112] "rem sive substan-

[109] *Med. Syn.*; VII, 14, 7.
[110] *Princ. Phil.*, II; VIII, 61, 1.
[111] *To Morus*; V, 403, 28.
[112] *Discours*, IV, *Lat. transl.*; VI, 558.

tiam,"[113] "*a re vera siue substantia.*"[114] He seemed to call any existing thing a substance, "aliquam rem existentem, sive substantiam. . . ."[115]

Mutually exclusive beings, or whatever things could exist separately from others in which they might appear to inhere as in a subject, seemed also to qualify for classification as substances: "haec enim est natura substantiarum, quod sese mutuo excludant."[116] He wrote: "quicquid est reale, potest separatim ab omni alio subjecto existere; quicquid autem ita separatim potest existere, est substantia. . . ."[117] Again he spoke of substances as certain things separated from others, "substantiae, sive res quaedam ab aliis separatae. . . ."[118]

Proceeding evidently along the same note of independence in actual existence, Descartes defined substance as a being which was of itself (per se) fit for, or capable of existing, "esse substantiam, sive esse rem quae per se apta est existere. . . ."[119] Substances then were things existing of their own selves. Descartes meant here things not needing another thing on which to depend as on a kind of support for existence, or not needing another thing in which to exist as in a subject. At the moment the relation of cause or reason was not at all considered, "substantiae, hoc est, res per se subsistentes,"[120] "omne id, quod naturaliter sine subjecto esse potest, sit substantia. . . ."[121] Even whatsoever might be preserved independently in existence by the extraordinary power of God was to be called a substance, "quicquid etiam per quantumvis extraordinariam Dei potentiam potest esse sine subjecto, substantia esse dicendum."[122]

[113] *Med.*, III; VII, 48, 13. Cf. *IIIae Resp.*; VII, 174, 18.
[114] *To Clerselier*; V, 355, 18.
[115] *Princ. Phil.*, I; VIII, 25, 10.
[116] *IVae Resp.*; VII, 227, 9.
[117] *VIae Resp.*; VII, 434, 24.
[118] *Princ. Phil.*, I; VIII, 31, 23.
[119] *Med.*, III; VII, 44, 22.
[120] *IVae Resp.*; VII, 222, 18. Cf. *Ibid.*; VII, 228, 10.
[121] *VIae Resp.*; VII, 435, 5.
[122] *Ibid.*; VII, 435, 6.

But the notion of substance: that it was what could exist by itself, or needed the aid of no other substance for existence, was dangerously ambiguous, and, as in the event, misleading. The danger was evident when Descartes wrote on another occasion, "Nempe haec est notio *substantiae,* quod per se, hoc est absque ope ullius alterius substantiae possit existere. . . ."[123] From a primitive notion of substance as any existing thing or being, Descartes had proceeded to its notion, exclusively of all idea of cause and reason, as a thing existing in or by itself, i. e., as not in a subject. Once let the notion of cause or reason be introduced however, and it was not a far nor a difficult, but an almost inevitable step to the dogmatic definition of the *Principia*: that only was a substance which needed no other thing to account for its existence. Here the definition, unlike preceding ones, contained a distinct causal or 'reasonable' note:

Per *substantiam* nihil aliud intelligere possumus, quam rem quae ita existit, ut nulla alia re indigeat ad existendum.[124]

Now of the three kinds of beings already called substances, only one needed no other being at all to account for its existence; all other beings called substances had need to account for their existence of the concursus of God:

Et quidem substantia quae nulla plane re indigeat, unica tantum potest intelligi, nempe Deus. Alias vero omnes, non nisi ope concursus Dei existere posse percipimus.[125]

If there be made to the requirement of Descartes' final definition that a real substance needs no other being to account for its existence, an exception for the creation or eternal concurrence of God, beings other than God can be justly termed substances. Descartes as a matter of fact made the exception, and termed substances beings created by God:

Possunt autem substantia corporea & mens, sive substantia cogitans

---

[123] *IVae Resp.*; VII, 226, 3.
[124] *Princ. Phil.*, I; VIII, 24, 21.
[125] *Princ. Phil.*, I; VIII, 24, 23.

creata, sub hoc communi conceptu intelligi, quod sint res, quae solo Dei concursu egent ad existendum.[126]

omnes omnino substantias, sive res quae a Deo creari debent ut existant. . . .[127]

Since by his strict definition the term substance necessarily contained the notion of cause or reason, it could not of course be understood univocally for Creator and creatures. In fact Descartes maintained that the univocal application of the term substance to God and to His creatures was utterly unintelligible:

Atque ideo nomen substantiae non convenit Deo & illis *univoce*, ut dici solet in Scholis, hoc est, nulla ejus nominis significatio potest distincte intelligi, quae Deo & creaturis sit communis.[128]

Descartes appeared to entertain an additional idea on substance. That thing was to be called a substance in which or by which, as in or by a subject, there existed whatsoever was perceived to be a property, quality or attribute of the thing. Plainly, substance was conceived as a subject of accidents:

Omnis res cui inest immediate, ut in subjecto, sive per quem existit aliquid quod percipimus, hoc est aliqua proprietas, sive qualitas, sive attributum, cujus realis idea in nobis est, vocatur *Substantia*.[129]

There were then, as has already been noted, two classes of substances: (a) Substance in the strictest sense, i. e., God, the all perfect, self-existing substance:

Substantia, quam summe perfectam esse intelligimus, & in qua nihil plane concipimus quod aliquem defectum sive perfectionis limitationem involvat, *Deus* vocatur.[130]

(b) created substances: either (1) mind, conceived as a subject for thought:

Substantia, cui inest immediate cogitatio, vocatur Mens;[131]

[126] *Ibid.*; VIII, 24, 31.
[127] *Med. Syn.*; VII, 14, 1.
[128] *Princ. Phil.*, I; VIII, 24, 26.
[129] *IIae Resp.*; VII, 161, 14.
[130] *Ibid.*; VII, 162, 4.
[131] *Ibid.*; VII, 161, 24.

or (2) body, conceived as an immediate subject for extension and its consequents:

Substantia, quae est subjectum immediatum extensionis localis, & accidentium quae extensionem presupponunt, ut figurae, situs, motus localis, &c., vocatur *Corpus*.[132]

In general how did Descartes arrive at the notion of substance? Some, he said, confounded the notion of substance with the notion of some extended thing or other. They confused the intelligible with the imaginable, and necessarily extended reality.[133] Yet indeed it was difficult to abstract the notion of substance, for substance differed only in reason from thought and extension:

Nonnulla enim est difficultas, in abstrahenda notione substantiae a notionibus cogitationis vel extensionis, quae scilicet ab ipsa ratione tantum diversae sunt. . . .[134]

Substance could not be known first, and from the fact alone that it was an existent thing, for existence of itself made no impression. Being or substance was recognized and known in essence and nature because some accident of it was apparent; and accidents, as was known, must be accidents of some existing being or substance. Substances then by a kind of inference were concluded to exist; their attributes revealed them, and revealed as well their nature.

Verumtamen non potest substantia primum adverti ex hoc solo, quod sit res existens, quia hoc solum per se nos non afficit; sed facile ipsam agnoscimus ex quolibet ejus attributo, per communem illam notionem, quod nihili nulla sint attributa, nullaeve proprietates aut qualitates. Ex hoc enim quod aliquod attributum adesse percipiamus, concludimus aliquam rem existentem, sive substantiam, cui illud tribui possit, necessario etiam adesse.[135]

Substances were not knowable immediately but only medi-

[132] *Ibid.*; VII, 161, 28.
[133] *To Morus*; V, 270, 20.
[134] *Princ. Phil.*, I; VIII, 31, 6.
[135] *Princ. Phil.*, I; VIII, 25, 3.

ately, by their function as the necessary subject for certain ever apparent forms or attributes:

Neque enim substantias immediate cognoscimus, ut alibi notatum est, sed tantum ex eo quod percipiamus quasdem formas sive attributa, quae cum alicui rei debeant inesse ut existant, rem illam cui insunt vocamus *Substantiam*.[136]

For a knowledge of substances a knowledge of attributes was essential; these latter manifested the former.[137]

The more Descartes knew of a substance's attributes, the more he knew of its nature:

nihil unquam aliud requiri putavi ad manifestandam substantiam, praeter varia ejus attributa, adeo ut, quo plura alicujus substantiae attributa cognoscamus, eo perfectius ejus naturam intelligamus. . . .[138]

Strike away those attributes, or a knowledge of them, and the very notion of substance was destroyed:

Si vero postea eandem illam substantiam spoliare vellemus iis attributis ex quibus illam cognoscimus, omnem nostram de ipsa notitiam destrueremus. . . .[139]

Descartes summed this up, and explained again the natures of those two created substances which he had come to know through a consideration of their attributes:

Cum autem ipsam substantiam non immediate per ipsam cognoscimus, sed per hoc tantum quod sit subjectum quorundam actuum, valde rationi consentaneum est, & usus jubet, ut illas substantias, quas agnoscimus esse subjecta plane diversorum actuum sive accidentium, diversis nominibus appellamus, atque ut postea, utrum illa diversa nomina res diversas vel unam & eandem significent, examinemus. Sunt autem actus *quidam*, quos vocamus *corporeos*, ut magnitudino, figura, motus, & alia omnia quae absque locali extensione cogitari non possunt; atque substantiam, cui illi insunt, vocamus *corpus*; nec fingi potest alia esse substantia quae sit subjectum figurae, alia quae sit subjectum motus

[136] *IVae Resp.*; VII, 222, 5.
[137] *Sur les Viemes Obis.*; IX, 216, 4. Cf. *Vae Resp.*; VII, 359, 5.
[138] *Vae Resp.*; VII, 360, 3. Cf. *Princ. Phil.*, I; VIII, 8, 19.
[139] *IVae Resp.*; VII, 222, 10.

localis &c., quia omnes illi actus conveniunt sub una communi ratione extensionis. Sunt deinde alii actus, quos vocamus *cogitativos*, ut intelligere, velle, imaginari, sentire &c., qui omnes sub rationi communi cogitationis, sive perceptionis, sive conscientiae, conveniunt; atque substantiam cui insunt, dicimus esse *rem cogitantem*, sive *mentem*, sive alio quovis nomine, modo ne ipsam cum substantia corporea confundamus, quoniam actus cogitativi nullam cum actibus corporeis habent affinitatem, & cogitatio, quae est ipsarum ratio communis, toto genere differt ab extensione, quae est ratio communis aliorum.[140]

An accident Descartes defined as that which could be present or absent to a subject without a corresponding corruption thereof. And so even substances could on occasion play the rôle of accidents:

Vocamus enim accidens, omne id quod adest vel abest sine subjecti corruptione, quamvis forte, in se spectatum, sit substantia, vt vestis est accidens homini.[141]

Nevertheless, as in the case of the wax, all accidents of a substance could not simultaneously be withdrawn. Substance and all its accidents could not in fact be separated:

nam quamvis concesserit et dixerit haec accidentia a cera tolli, ut quod dura, frigida *et similia*, dixit et animadvertit semper alia in eorum locum succedere, adeo ut cera nunquam absque accidentibus sit, et sic illam nunquam abstraxit ab accidentibus.[142]

Yet Descartes appeared to assign to accidents no reality or entity other than a modal one, "Nulla enim accidentibus realitas (hoc est nulla entitas plusquam modalis) tribui potest, quae non ab idea substantiae desumatur.[143]

Now a mode, Descartes said, could not be a part of a substance, "modus non potest esse pars substantiae"; [144] such was its nature, he seemed to maintain, that without it a substance

[140] *IIIae Resp.*; VII, 176, 1. Cf. *IVae Resp.*; VII, 223, 1. *Princ. Phil.*, I; VIII, 22, 27.

[141] *To Regius*; III, 460, 14. Cf. *Ibid.*; III, 508, 17. *To Morus*; V, 403, 6.

[142] *Entretien avec Burman*; V, 151.

[143] *Vae Resp.*; VII, 364, 16.

[144] *VIae Resp.*; VII, 433, 24.

could be known, but no mode could be, or be known, unless simultaneously its substance existed, excepting what might possibly happen under the influence of divine intervention:

ad rationem modi pertinere, ut quamvis substantiam sine illo facile intelligamus, non possimus tamen vice versa modum clare intelligere, nisi simul concipiamus substantiam cujus est modus;[145]

non debet inferri me negasse illos absque ipsa per divinam potentiam poni posse. . . .[146]

Figure and motion for example, or love and hate, were modes of corporeal substance, or of the mind. Body, or mind, could exist without such and such a particular figure and motion, or emotion, but these latter could never exist without the former.[147]

Those accidents, therefore, of which strict definition has already been given, were modes, modes properly so-called—or modes of things, which to be known and to exist demanded known and really existing subjects for affectation, though apparently they were not in any way of the essences of these substances. There were besides, modes of thought, as Descartes called them (or modes of thought in a remote sense, as will be seen—attributes—such that without them the substances of which they were the attributes could not even be):

ie distingue *inter modos proprie dictos, & Attributa sine quibus res quarum sunt attributa esse non possunt; siue inter modos rerum ipsarum, & modos cogitandi. . . .*[148]

Yet on occasion Descartes indefinitely called modes any attributes or qualities considered as affecting a substance:

Et quidem hic per modos plane idem intelligimus, quod alibi per *attributa,* vel *qualitates.* Sed cum consideramus substantiam ab aliis affici, vel variari, vocamus *modos. . . .*[149]

And too, the terms "mode" and "attribute" were often used

[145] *Notae in Prog.*; VIII, 350, 11.
[146] *IVae Resp.*; VII, 249, 10.
[147] *To* * * *; IV, 349, 3.
[148] *To* * * *; IV, 348, 9.
[149] *Princ. Phil.*, I; VIII, 26, 19.

loosely, ambiguously, interchangeably; any mode, quality, or accident considered as inhering in a substance Descartes called attribute, " ac denique, cum generaliter spectamus tantum ea substantiae inesse, vocamus *attributa.*" [150]

Strictly however, modes of thought (or attributes, taking the term modes of thought in a loose, unusual, and remote sense) were to be defined as universals such as: duration, existence, size—unattached to any concept of a particular substance:

*Duratio, ordo & numerus,* a nobis etiam distinctissime intelligentur, si nullum iis substantiae conceptum affingamus, sed putemus durationem rei cujusque esse tantum modum, sub quo concipimus rem istam, quatenus esse perseverat.[151]

But these same universals, or modes of thought, conceived in connection with a created substance, and as something essentially unchangeable therein, were called attributes in a strict sense:

*existentia autem, duratio, magnitudo, numerus, & vniversalia omnia, non mihi videntur esse modi proprie dicti, vt neque in Deo iustitia, misericordia, &c. Sed latiori vocabulo dicuntur Attributa, siue modi cogitandi. . . .*[152]

Et etiam in rebus creatis, ea quae nunquam in iis diverso modo se habent, ut existentia & duratio, in re existente & durante, non qualitates aut modi, sed attributa dici debent.[153]

Descartes warned against, but still employed, the loose and ambiguous meaning of the term " attribute " to signify a mere changeable affection, or mode properly so-called, of a substance. Attribute strictly taken meant an universal, or mode of thought conceived as something actually inhering in, and constituting necessarily and unchangeably the essence of a substance. Attribute, therefore, strictly taken, or essence, or substance were interchangeable synonyms.

[150] *Ibid.*; VIII, 26, 23.
[151] *Princ. Phil.*, I; VIII, 26, 11.
[152] *To* * * *; IV, 349, 9.
[153] *Princ. Phil.*, I; VIII, 26, 27.

cavendumque est, ne per *attributum* nihil hic aliud intelligimus quam modum: nam quicquid alicui rei a natura tributum esse cognoscimus, sive sit modus qui possit mutari, sive ipsamet istius rei plane immutabilis essentia, id vocamus ejus attributum.[154]

And to this one property, attribute, or essence (as to substance) all other accidents or modes of whatsoever kind were to be attributed:

Et quidem ex quolibet attributo substantia cognoscitur; sed una tamen est cujusque substantiae praecipua proprietas, quae ipsius naturam essentiamque constituit, & ad quam aliae omnes referuntur.[155]

Now these essential attributes were again, and in another way than as modes of thought, called modes, or they were capable of variation, if not of essential change. As has already been seen, Descartes called these essential attributes modes—as actualized universals, which were modes of thought. Now again he called these essential and essentially unchangeable attributes (or modes of thought in a remote sense), and which for the two classes of created substances he maintained to be thought and tension, modes, because, though they could not suffer any change in essence, they appeared to be capable of suffering unessential changes:

Cogitatio & extensio sumi etiam possunt pro modis substantiae, quatenus scilicet una & eadem mens plures diversas cogitationes habere potest; atque unum & idem corpus, retinendo suam eandem quantitatem, pluribus diversis modis potest extendi. . . .[156]

Thought and extension were then the attributes or essences of substances; and at the same time under a different aspect, because they were in a measure variable, they were called modes of substances.

Thought and extension admitted various modes in themselves, but viewed strictly in themselves they were not modes but attributes strictly defined, and as such in essence unchange-

[154] *Notae in Programeta*; VIII, 348, 19.
[155] *Princ. Phil.*, I; VIII, 25, 12. [156] *Princ. Phil.*, I; VIII, 31, 13.

able, constituting the nature or essence of substances, attributes such as were presupposed for the existence of other modes, and to which as to essences, or to substances, all other modes were referred:

Sic extensio alicujus corporis, modos quidem in se varios potest admittere: nam alius est ejus modus, si corpus istud sit sphaericum, alius, si sit quadratum; verum ipsa extensio, quae est modorum illorum subjectum, in se spectata, non est substantiae corporeae modus, sed attributum, quod ejus essentiam naturamque constituit.[157]

Sic denique cogitationis modi varii sunt: nam affirmare alius est cogitandi modus quam negare, & sic de ceteris verum ipsa cogitatio, ut est internum principium, ex quo modi isti exurgunt, & cui insunt, non concipitur ut modus, sed ut attributum, quod constituit naturam alicujus substantiae. . . .[158]

Cogitatio & extensio spectari possunt ut constituentes naturas substantiae intelligentis & corporeae; tuncque non aliter concipi debent, quam ipsa substantia cogitans & substantia extensa. . . .[159]

Nor was there any absurdity in conceiving one accident as the subject of others, v. g. quantity:

Car il n'y a point d'inconuenient ou d'absurdité à dire qu'vn accident soit le sujet d'vn autre accident, comme on dit que la quantité est le sujet des autres accidens.[160]

It might be here noted that Descartes used the term "accident" to signify quantity, or extension; now this latter was for him an attribute, indispensable to the substance, and not, as accident was defined, capable of being present or absent without a destruction of the substance. It seems therefore possible to infer that Descartes, though he defined it otherwise, on occasion used the term accident to signify anything not at the moment conceived strictly as a substance.

When one substance was added to another substance it was

[157] *Notae in Prog.*; VIII, 348, 26.
[158] *Notae in Prog.*; VIII, 349, 2.
[159] *Princ. Phil.*, I; VIII, 30, 26.
[160] *For Hobbes*; III, 355, 15.

not proper to term the first an accident, but only the mode of application could be conceived as accidental:

Fateor quidem unam substantiam alteri substantiae posse accidere; atqui, cum hoc contingit, non ipsa substantia est quae habet formam accidentis, sed solus modus quo accidit, ut, cum vestis accidit homini, non ipsa vestis, sed tantummodo *vestitum esse* est accidens.[161]

Common to all substances was the one attribute of existing in itself, "unum ex attributis cujuslibet substantiae est, quod per se subsistat." [162] And in God there were only attributes, no modes, no qualities:

Ideoque in Deo non proprie modos aut qualitates, sed attributa tantum esse dicimus, quia nulla in eo variatio est intelligenda.[163]

Finally, Descartes seemed to maintain an identity between the attributes of a substance collectively taken and the substance itself:

Omnia attributa, collectiva sumta, sunt quidem idem cum substantia, sed non singula et distributive sumta, . . .[164]

He seemed to speak even as if material substances were made up of accidents. Already Descartes has been quoted as maintaining that an increase of substance resulted upon an increase of extension, and that upon a substance's decrease, extension proportionately disappeared (cf. n. 98). Both material substances and the ego admitted modification through accidents:

Sed corpus humanum, quatenus a reliquis differt corporibus, non nisi ex certa membrorum configuratione aliisque accidentibus esse conflatum; . . . humanum autem corpus aliud fit ex hoc solo quod figura quarumdam ejus partium mutetur. . . .[165]

But the mind, unlike material substances, was a so-called pure substance, and not made up of accidents:

mentem vero humanam non ita ex ullis accidentibus constare, sed puram

[161] *VIae Resp.*; VII, 435, 8.
[162] *Notae in Prog.*; VIII, 348, 24.
[163] *Princ. Phil.*, I; VIII, 26, 25.
[164] *Entretien avec Burman*; V, 155.
[165] *Med. Syn.*; VII, 14, 6. Cf. *IIae Resp.*; VII, 153, 13.

esse substantiam: etsi omnia ejus accidentia mutentur, ut quod alias res intelligat, alias velit, alias sentiat, &c, non idcirco ipsa mens alia euadit. . . .[166]

What relations existed between substances, between modes properly so-called, between substances and modes, between substances and attributes, or between attributes themselves?

Between substances there was a real distinction; that is they could be known and exist separately, one without the other, either naturally, or by the extraordinary powers of God:

*Realis* proprie tantum est inter duas vel plures substantias: & has percipimus a se mutuo realiter esse distinctas, ex hoc solo quod unam absque altera clare & distincte intelligere possumus . . . & quae vel a Deo possunt separari, vel sejunctim conservari, realiter sunt distincta.[167]

In addition, modes of one substance were really distinct from another substance, or modes thereof:

Distinctio autem, qua modus unius substantiae differt ab alia substantia vel a modo alterius substantiae . . . realis potius dicenda esse videtur, quam modalis: quia modi illi non clare intelliguntur sine substantiis realiter distinctis, quarum sunt modi.[168]

Between a substance and its mode properly so-called, and between two modes of the same substance there existed a modal distinction. He could clearly perceive a substance without a particular mode properly so-called, or he could clearly perceive one mode of a substance without another mode; but he could conceive of no mode properly so-called without its substance:

*Distinctio modalis* est duplex: alia scilicet inter modum proprie dictum, & substantiam cujus est modus; alia inter duos modos ejusdem substantiae. Prior ex eo cognoscitur, quod possimus quidem substantiam clare percipere absque modo quem ab illa differe dicimus, sed non possimus, viceversa, modum illum intelligere sine ipsa. . . . Posterior vero cognoscitur ex eo, quod unum quidem modum absque alio possimus

---

[166] *Med. Syn.*; VII, 14, 9.

[167] *Princ. Phil.*, I; VIII, 28, 20. Cf. *IIae Resp.*; VII, 162, 11. *Ibid.*; VII, 170, 7.

[168] *Princ. Phil.*, I; VIII, 29, 31.

agnoscere, ac viceversa; sed neutrum tamen sine eadem substantia cui insunt.[169]

Between substance and its attributes, there existed only a distinction of reason, *cum fundamento in re*; for the clear knowledge of a substance was precluded if that substance was bereft of an essential attribute, nor could one attribute be conceived as really separated from another:

Denique *distinctio rationis* est inter substantiam & aliquod ejus attributum, sine quo ipsa intelligi non potest, vel inter duo talia attributa ejusdem alicujus substantiae. Atque cognoscitur ex eo, quod non possimus claram & distinctam istius substantiae ideam formare, si ab ea illud attributum excludamus; vel non possimus unius ex ejusmodi attributis ideam clare percipere, si illud ab alio separemus.[170]

Descartes, however, seemed to deny the existence of all real accidents, in so far as they possessed any entity beyond a modal one. To attribute to them a greater entity was to conceive them as substances, though they were known not to be such:

Nos autem qualitates actiuas non negamus, sed negamus tantum ipsis Entitatem aliquam maiorem quam Modalem esse tribuendum; hoc enim fieri non potest nisi tamquam substantiae concipiantur.[171]

Sic, cum accidentia putant esse realia, repraesentant sibi ipsa tanquam substantias, etsi substantias esse non iudicent. . . .[172]

For instance to call gravity, recognized as a quality of bodies, real was to consider it as a substance:

Nam cum, exempli causa, concipiebam gravitatem instar qualitatis cujusdam realis, quae crassis corporibus inesset, etsi vocarem illam *qualitatem*, quatenus scilicet ad corpora, quibus inerat, ipsam referebam, quia tamen addebam esse *realem*, revera putabam esse substantiam:[173]

He admitted in nature of no real qualities, which he said must be conceived of as little souls added to bodies. Movement,

[169] *Princ. Phil.*, I; VIII, 29, 16.
[170] *Princ. Phil.*, I; VIII, 30, 7. Cf. *To* * * *; IV, 349, 20.
[171] *To Regius*; III, 503, 22. Cf. *IVae Resp.*; VII, 248, 19.
[172] *To* * * *; III, 430, 24. Cf. *VIae Resp.*; VII, 364, 16.
[173] *Ibid.*; VII, 441, 23.

etc. was no more a real quality of a substance than figure, etc.; and this the Philosophers called a mode of substance:

ie ne suppose aucunes *qualitez reelles* en la nature, qui soient adioustées a la substance, comme des petites ames a leurs corps, & qui en puissent estre separées par la puissance diuine; & ainsy que ie n'attribue point plus de realité au mouuement, ny a toutes ces autres varietez de la substance, qu' on nomme des *qualitez*, que communement les philosophes en attribuent a la figure, laquelle ils ne nomment pas *qualitatem realem*, mais seulement *modum*.[174]

Moreover Descartes said that whatsoever was real could exist separately from any subject at all. What naturally or even by the extraordinary power of God could exist separately was substance, and not accident. There could then be no *real* accidents:

Ac deinde, omnino repugnat dari accidentia realia, quia quicquid est reale, potest separatim ab omni alio subjecto existere; quicquid autem ita separatim potest existere, est substantia, non accidens.[175]

Descartes denied as well in matter the existence of substantial forms:

car mesme ie supposay, expressement, qu'il n'y auoit en elle aucune de ces Formes ou Qualitez dont on dispute dans les Escholes. . . .[176]

By substantial form he understood a kind of real corporeal substance superadded to the matter, and forming with it a purely corporeal whole:

hic est notandum, nomine formae substantialis, cum illam negamus, intelligi substantiam quandam materiae adjunctam, & cum ipsa tantum aliquod mere corporeum componentem, quaeque non minus, aut etiam magis quam materia, sit vera substantia, siue res per se subsistens, quia nempe dicitur esse Actus, illa vero tantum Potentia. Huius autem substantiae, seu formae substantialis, in rebus mere corporalibus, a materia diuersae. . . .[177]

Philosophers, he said, unjustly applied the idea of the soul and body compositum to explain what they called real qualities and substantial forms:

[174] *To Mersenne*; III, 648, 4.
[175] *VIIae Resp.*; VII, 434, 23.
[176] *Discours*, V; VI, 42, 31.
[177] *To Regius*; III, 502, 6.

ils mélent ordinairement ces deux idées du cors & de l'ame, en la composition des idées, qu'ils forment des qualitez reeles, & des formes substantielles, que ie croy deuoir estre entierement reiettée.[178]

Indeed it was useless to introduce substantial forms as principles of action, for admittedly they were unknown; so to introduce them was to attempt an explanation of the unknown by a further unknown.[179] The substantial forms in matter were conceived by many, according to Descartes, as continually coming into existence. Now the origin of substances, as Descartes appeared to maintain, was accounted for only by the creation of God: directly, as in the case of the soul or the substantial form of the body; else indirectly by motion created and conserved among the parts of the one universal matter, as in the case of bodies. Yet no philosopher claimed for the origin of substantial forms either direct creation by God, or even indirect creation through eduction from matter by motion. Then substantial forms in matter were not substances, nor really did they exist:

Quod plane repugnet vt substantia aliqua de nouo existat, nisi de nouo a Deo creetur; videmus autem quotidie multas ex illis formis, quae substantiales dicuntur, de nouo incipere esse, quamuis a Deo creari non putentur, ab ijs qui putant ipsas esse substantias; ergo male hoc putant. Quod confirmatur exemplo Animae, quae est vera forma substantialis hominis; haec enim non aliam ob causam a Deo immediate creari putatur, quam quia est substantia; ac proinde, cum aliae non putentur eodem modo creari, sed tantum educi a potentia materiae, non putandum etiam est eas esse substantias.[180]

Descartes therefore definitely cast aside from matter real qualities and substantial forms; it was enough to account for bodies and changes therein by a composition from or by a variation in the parts of the one universal matter, or substance.

puis si on compare les supositions des autres auec les miennes, c'est a dire toutes leurs *qualitez réeles*, leurs *formes substantielles*, leurs

[178] *To L'Abbé De Launay*; III, 420, 21.
[179] *To Regius*; III, 506, 4.
[180] *To Regius*; III, 505, 11.

*élemens* & choses semblables . . . auec cela seul, que tous les cors sont composez de quelques parties. . . .[181]

It need not be concluded, however, that bodies, or material substances, were not real substances. As has been seen, Descartes so called them, and they were such in fact, created by God, but, as has also been seen, mediately, by motion according to the indefinitely potential or actual parts of the one universal matter, whereof He alone was Creator, Mover, and Conserver.

Descartes considered the degrees of reality in our ideas and their objects. The idea of substance contained, as it were, more of objective reality in itself than that of accident or mode; and the idea of an infinite substance more of reality than the idea of a creature:

Sunt diversi gradus realitatis, sive entitatis; nam substantia plus habet realitatis, quam accidens vel modus; & substantia infinita, quam finita. Ideoque etiam plus realitatis objectivae in idea substantiae, quam accidentis; & in idea substantiae infinitae, quam in idea finitae.[182]

Substance in itself had more of reality than a mode; and if there should be real qualities or incomplete substances, their reality would be between that of substance and mode; moreover the infinite Substance had more of reality than the finite:

Satisque explicui quomodo realitas suscipiat plus & minus: ita nempe ut substantia sit magis res quam modus; atque si dentur qualitates reales, vel substantiae incompletae, sunt magis res quam modi, sed minus quam substantiae completae; ac denique, si detur substantia infinita & independens, est magis res quam finita & dependens.[183]

What did Descartes mean by a complete and an incomplete substance? He appeared to define a complete substance as one which lacked none of the attributes necessary for its recognition as a substance:

Itaque ad primum respondeo, me per *rem completam* nihil aliud

[181] *To Morin*; II, 200, 2.
[182] *IIae Resp.*; VII, 165, 27. [183] *IIIae Resp.*; VII, 185, 21.

intelligere, quam substantiam indutam iis formis sive attributis, quae sufficiunt ut ex iis agnoscam ipsam esse substantiam.[184]

Some substances he knew were called incomplete; but this could not mean that it was impossible for them to exist by themselves, or if such were the case, they could not, in accord with the already established definition of substance (per se existens), be termed substances:

Non ignoro quasdam substantias vulgo vocari *incompletas*. Sed si dicantur incompletae, quod per se solae esse non possint, fateor mihi contradictorium videri, ut sint substantiae, hoc est, res per se subsistentes, & simul incompletae, hoc est per se subsistere non valentes.[185]

But substances could be called incomplete in so far as they, possessing all the requirements for substances, or complete substances, were referred to some other substance with which they formed a substantial whole:

Aliter autem dici possunt substantiae incompletae, ita scilicet ut, quatenus sunt substantiae, nihil quidem habeant incompleti, sed tantum quatenus referuntur ad aliquam aliam substantiam, cum qua unum per se componunt.[186]

So the human arm was a complete substance, but with reference to the whole body it might be termed incomplete; in like manner were the mind and body incomplete substances:

Ita manus est substantia incompleta, cum refertur ad totum corpus cujus est pars; sed est substantia completa, cum sola spectatur. Et eodem plane modo mens & corpus sunt substantiae incompletae, cum referuntur ad hominem quem componunt; sed, solae spectatae, sunt completae.[187]

Nor was the human arm, being a substance, thus denied to belong to the integral nature of the human body; nor belonging to the integral nature thereof could it be denied to be a substance of itself:

[184] *IVae Resp.*; VII, 222, 1.
[185] *Ibid.*; VII, 222, 15.
[186] *Ibid.*; VII, 222, 20.
[187] *Ibid.*; VII, 222, 25.

Atque, quemadmodum ille qui brachium hominis diceret esse substantiam realiter a reliquo ejus corpore distinctam, non ideo negaret illud idem ad hominis integri naturam pertinere; nec qui dicit idem brachium ad hominis integri naturam pertinere, ideo dat occasionem suspicandi non posse illud per se subsistere:[188]

What did Descartes mean by a simple and by a composite being? That subject in which there was recognized extension alone with its varying modes and that subject in which there was recognized thought alone with its varying modes were simple beings:

Unde patet, illud subjectum, in quo solam extensionem cum variis extensionis modis intelligimus, esse ens simplex; ut etiam subjectum, in quo solam cogitationem cum variis cogitationem modis agnoscimus.[189]

That being in which both extension and thought were considered to be at the same time was a composite being, man for instance—a complete and a composite substance, consisting in turn of two complete, though at the same time (from a different aspect) incomplete, and simple substances: body and soul:

Illud autem, in quo extensionem & cogitationem simul consideramus, esse compositum: hominem scilicet, constantem anima & corpore. . . .[190]

A composite being was that in which there were two or more attributes (but remember that attributes = essences = substances), either of which was to be conceived not as a mode of the other, but as one attribute (one substance) of the composite substance, capable of being conceived and therefore of existing without the other! Now in a simple substance the several "attributes" were conceived as distinct only in reason—though as with a *fundamentum in re*, not as really distinct.

Quippe compositum illud est, in quo reperiuntur duo vel plura attributa, quorum utrumque sine alio potest distincte intelligi: ex hoc enim, quod unum sine alio sic intelligatur, cognoscitur non esse ejus modus, sed res vel attributum rei, quae potest absque illo subsistere. . . .[191]

---

[188] *IVae Resp.*; VII, 228, 5.
[189] *Notae in Prog.*; VIII, 351, 1.
[190] *Ibid.*; VIII, 351, 5.
[191] *Ibid.*; VIII, 350, 23.

Descartes, as has been seen, maintained mind and body to be each a complete, though at the same time incomplete, and simple substance, yet the two to be the components of a composite being,—each really distinct, and each capable of existing without the other:

Mens autem distincte & complete, sive quantum sufficit ut habeatur pro re completa, percipi potest, sine ulla ex iis formis sive attributis, ex quibus agnoscimus corpus esse substantiam . . . corpusque intelligitur distincte atque ut res completa, sine iis quae pertinent ad mentem.[192]

Et quamvis fortasse (vel potius, ut postmodum dicam, pro certo) habeam corpus, quod mihi valde arcte conjunctum est, quia tamen ex una parte claram & distinctam habeo ideam mei ipsius, quatenus sum tantum res cogitans, non extensa, & ex alia parte distinctam ideam corporis, quatenus est tantum res extensa, non cogitans, certum est me a corpore meo revera esse distinctum, & absque illo posse existere. . . .[193]

What precisely was the relation of the substance, ego, to the substance, body, was difficult to explain;[194] not only was it as that of pilot to ship, but these two substances, as the sensations and passions of the soul taught, were most closely conjoined, composed, and most thoroughly mixed, as it were, to form with one another a single composite whole:

Docet etiam natura, per istos sensus doloris, famis, situs, &c., me non tantum adesse meo corpori ut nauta adest navigio, sed illi arctissime esse conjunctum & quasi permixtum, adeo ut unum quid cum illo componam.[195]

But the union was not an accidental one; man was not an *ens per accidens*:

Vix quicquam durius, & quod maiorem offensae ac criminationis occasionem daret in Thesibus tuis ponere potuisses, quam hoc: *quod homo sit ens per accidens:*[196]

Nor was the union adventitious or dispensable; but the natures

[192] *IVae Resp.*; VII, 223, 19.
[193] *Med.*, II; VII, 78, 13. Cf. *To* * * *; II, 38, 22.
[194] *Entretien avec Burman*; V, 163.
[195] *Med.*, VI; VII, 81, 1.
[196] *To Regius*; III, 460, 2.

of both substances, soul and body, were adapted one for the other, and for the union; their natures in a way demanded it:

Objici tantum potest, non esse accidentarium humano corpori, quod animae coniungatur, sed ipsissimam eius naturam; quia, corpore habente omnes dispositiones requisitas ad animam recipiendam, & sine qibus non est proprie humanum corpus, fieri non potest sine miraculo, vt anima illi non vniatur; atque etiam non esse accidentarium animae, quod iuncta sit corpori, sed tantum accidentarium esse illi post mortem, quod a corpore sit seiuncta.[197]

Nor again could it be maintained that the soul was a mode, howsoever understood, of the body:

Prius, mentem, vt substantiam a corpore distinctam, considerando, scripseras hominem esse *ens per accidens*; nunc autem econtra, considerando mentem & corpus in eodem homine arcte vniri, vis illam tantum esse *modum corporis*. Qui error multo peior est priore.[198]

The soul and body of man, in fact, formed a compositum, not by a mere simultaneous presence or relation, but by a real substantial union:

Asserimus enim hominem ex Corpore & Anima componi, non per solam praesentiam, siue appropinquationem, vnius ad alterum, sed per veram vnionem substantialem. . . .[199]

And Descartes went no further, that is, so as to state *precisely* and *positively* what he meant by a substantial union.

Truly an adequate exposition and critique of Descartes' treatment of substance and accident is difficult. First of all it should be apparent that the problem of substance and accident as a problem in and for itself was never considered by Descartes at any length at all; nor did he busy himself beyond a small measure to consider them abstractly or generally. His interest was not with substance in general but with actual, real, particular, and knowable substances. He sought primarily to de-

[197] *To Regius*; III, 460, 25.
[198] *To Regius*; IV, 250, 11.
[199] *To Regius*; III, 508, 3.

termine the distinction between such and, in course, as a means to an end, their natures.[200]

When Descartes finally took up the general notion of substance, he defined it not by contrast with accident, of whose nature it was to exist in another, and therefore as that which existed in itself. He defined substance as that which was existing absolutely in itself, not only as intrinsically independent of every subject, but as independent extrinsically of every reason and of every cause.[201] Substance thus defined as that which needed no other thing to account for its existence could mean no mere *ens in se,* but meant an *ens a se.*[202] That thus he meant to define it Descartes went on in the *Principia* to state most expressly. Now to say the least this definition went to extremes; and apparently too it was *a priori,* for Descartes neither showed how such a definition was a necessary postulate of the data of experience, nor did he indicate in any way how it was to be required by even the strictest logic. As far as is evident there was no need in defining substance to introduce and stress the idea of cause; nor need to establish substance as a kind of supreme genus which could be properly only one single being; nor need to maintain that the many other beings were substances only by analogy, and by such an exception to the established definition as came close even to nullifying it. Here however it is worth noting that though there was in Descartes often the appearance of pantheism and that though Spinoza used these appearances well for his own purposes, the real Descartes was not a pantheist.[203]

With regard to particular substances Descartes claimed that the more he knew of their properties or attributes the more he

[200] Cf. Lévy-Bruhl, *Descartes,* Cours inédit. Quoted by Étienne Gilson in *René Descartes, Discours de la Méthode: Texte et Commentaire* (Paris, 1925), p. 304.

[201] Cf. Régis Jolivet, *La Notion de Substance* (Paris, 1929), pp. 129-30.

[202] Cf. contra Peter Coffey, *Ontology* (New York, 1929), p. 230.

[203] Cf. Octave Hamelin, *Le Système de Descartes* (Paris, 1921), p. 306.

knew of the substances themselves.[204] But what a new interpretation he gave to the old formula by such a statement! For when Descartes came to know attributes he did not come to know substances better through them as through media, but since he had determined attributes strictly so-called, such as thought or extension, to be nothing other than the substances themselves,[205] the more attributes Descartes knew the more substances themselves he knew, not mediately through the attributes, but immediately and in themselves. Then was it not a contradiction to maintain, as Descartes did, that substances were not knowable immediately in themselves, but only mediately through their accidents and attributes, when thought, a so-called attribute and at the same time a substance, he maintained to be knowable immediately?

It may be here enquired again what precisely Descartes meant by the term *cogitatio* or thought. Its ambiguous use on one occasion as a substance, and on another as a mode or action of this substance has already been indicated. But as becomes evident this essential attribute of the Ego, thought, was realized and substantialized; in a word it was the substance of the Ego. Now to have maintained that thought, really an activity of the Ego, constituted its essence or substantiality appears poor logic. Ludewig has it thus, "das *agere* folgt zwar aus dem *esse,* ist aber nicht das *esse.*" [206] And Saint Thomas has a few words to the point:

> quidquid dicatur de potentiis animae, tamen nullus unquam opinatur nisi insanus, quod habitus et actus animae sint ipsae ejus essentia.[207]

Thought moreover could not constitute the essence of the Ego or make it a substance, for thought is altogether disconnected

[204] Cf. above n. 138.

[205] Cf. above n. 159.

[206] Cf. Carl Ludewig, "Der Substanzbegriff bei Cartesius . . .," *Philosophisches Jahrbuch,* VI Bd. (1893), pp. 61-72, 273-284, p. 66.

[207] Saint Thomas, *Quaest. Disp., De Spir. Creat.,* art. 11, ad 1.

and discontinued.[208] Nor can experience allow the retort of Descartes that the Ego thinks always.

Again the essential attribute extension, because it is naturally inseparable from corporeal substance, should not on that account be deemed really and absolutely identical with this latter. Descartes does not appear justified in maintaining inseparability and identity to be necessarily synonymous terms.[209]

Descartes seems to have established between the concrete and abstract reality no sharp and necessary distinction. This deficiency is remotely evident in his frequently ambiguous use of the term *cogitatio* to signify either an agent, an action, or a result of this action;[210] and again is it more particularly evident in his claim for extension, apparently conceived at times abstractly and mathematically to constitute the nature of corporeal substance. Extension for Descartes came close to being a pure abstraction; and in some way or other corporeal substance was this abstraction realized.[211] For example when he *in thought* stripped a piece of wax of all its accidents as far as possible, with the necessary exception for extension, it was not the concept of the substance-wax which remained but the concept of a kind of indefinite matter.[212]

At any rate it seems clear that Descartes denied the existence of real accidents. Such a negation was for him only logical, because he maintained that the term "real" could be applied only to substances. Whatsoever was real could exist in itself. A real distinction was primarily between substances; it was admissible otherwise only by a kind of analogy. Descartes therefore may be said to have denied the existence of real accidents not only nominally but actually as well. There were for substances not any intrinsic determinations, but only relations,

[208] Cf. Régis Jolivet, *op. cit.*, p. 136.
[209] Cf. above n. 167.
[210] Cf. above, n. 29-31.
[211] Cf. Régis Jolivet, *op. cit.*, p. 154.
[212] Cf. *Ibid.*, p. 138.

modes, or extrinsic determinations. But such a view as Descartes' would lead him logically, we may say with Coffey,[213] either to deny all change, or to affirm that all change is substantial. And Descartes, when he made the whole essence of the Ego consist in the essentially invariable attribute thought, and insisted that that variability which thought implied could by no means imply a change in essence or substance, but could imply only varying modes, appears in some measure to have eliminated all real change from spiritual substances.[214] Moreover he maintained, at least implicitly, that all change in material substances, effected by motion on indefinitely divisible and extended matter or extension, was substantial.

Especially would the difficulties occasioned in Descartes' theory of substance and accident by his denial of real accidents be apparent, if someone should elaborate his confident attempt to explain the facts of the Transubstantiation. The attempt might be here sketched in brief. There were no real accidents of bread and wine;[215] they could not therefore remain after the change. What alone remained according to Descartes was the *superficies.*[216] Only through this, as Aristotle too maintained, was contact made with the senses.[217] But the *superficies* was defined by Descartes not as part of a substance, but only as some kind of medium between two substances,[218] as only a mode and as a fashion of being, having no entity beyond a modal one.[219] (Mode here cannot be taken for a mode of thought in a remote sense, or essential attribute.) When Descartes therefore defined away real accidents, he defined away with them an explanation to the Transubstantiation. His ambiguous use of the word *superficies* is evident, and yet more evident is the variable and intangible meaning Descartes applied to the term mode.

[213] Cf. Peter Coffey, *op. cit.*, p. 244.
[214] Cf. above, n. 157-159.
[215] *IVae Resp.*; VII, 253, 19, 27.
[216] *Ibid.*; VII, 255, 9.
[217] *Ibid.*; VII, 249, 14.
[218] *Ibid.*; VII, 250, 27.
[219] *To Mesland*; IV, 163, 24.

The use of the term mode was a mere verbal explanation which really explained nothing.

In addition Descartes rejected for matter substantial forms. Small wonder, when he thought that they were to be defined, as he believed the Scholastics defined them, as kinds of real substances adjoined to matter and forming with it (composite) corporeal beings—much as the soul was added to the human body to form with it a compositum.

Already too it must be evident that Descartes' use of many terms was to say the least ambiguous. Perhaps one of the broadest criticisms that may be made of Descartes is that he completely neglected the precise distinctions of the Greek and Scholastic philosophies. The task of constructing in twenty short years a system such as to rival the *philosophia perennis,* already maturing for some twenty centuries, was too great a task for even the genius of Descartes. So often his impotence becomes apparent. Compare, for example, the shifting meanings he evidently allowed to the terms "accidents," "modes," "attributes," *superficies, cogitatio.*

Finally it must again be insisted upon that Descartes maintained the substantial union of the soul and body. It was essential to his system; thereby was sensation possible, and thereby too was the existence of the exterior world demonstrable. But though Descartes to explain this union used Scholastic terms, he used them with a meaning other than Scholastic; he defined the soul as so pure a spirit, and the body as so inert a machine that though their union was possible, it was for him impossible either to conceive or to explain the mode of union. Gilson puts it thus:

> Reste à savoir si cette union substantielle que requiert le système y est concevable. Elle y reste possible, mais non concevable. . . . Elle s'éprouve, mais ne se représente pas. . . .[220]

---

[220] Étienne Gilson, *René Descartes, Discours de la Méthode . . . ,* p. 434.

A critique of the problem of substance and accident in the philosophy of Descartes might be summarized as follows: Descartes' definition of substance is certainly equivocal, and unnecessarily so; and equivocal too is his use of the term substance to indicate both the one all-comprehensive universal matter, and particular parts thereof, or bodies. Essential attributes were quite questionably substantialized. The concrete and abstract were subtly confused. The terms accident, mode, attribute, *cogitatio,* and *superficies* were among others promiscuously and bewilderingly employed. A purely arbitrary system of distinctions was set up, dogmatically it seems, though divorced from an unbiased view of reality. Real accidents were thereby denied, and explained away was all credible explanation to the Transubstantiation. Finally, the substantial union of soul and body, though insisted upon, was posited in terms which rendered it insoluble and inexplicable.

There is therefore a considerable measure of truth in the general criticism of Brunschvicg:

> Envisagée dans son principe, la doctrine cartésienne de la substance était équivoque; envisagée dans ses conséquences elle est stérile.[221]

Henry R. Burke.

*The Sulpician Seminary,*
*The Catholic University of America.*

[221] Léon Brunschvicg, "La Révolution cartésienne et la Notion spinoziste de la Substance," *Revue de Méta. et de Mor.*, Sept., 1904, pp. 755-778, p. 768.

# BOOK REVIEWS

*The Logic of William of Ockham.* By ERNEST A. MOODY. New York: Sheed and Ward, 1935. Pp. xiv + 322.

"The present study is designed to reveal, through a careful analysis carried out with adequate source material, the philosophical content, and the essentially Aristotelian inspiration, of Ockham's theory of science." This statement from the author's preface sums up the nature and content of this work. It is a thorough exposition of Ockham's nominalistic restatement of the *Organon*, as found in his writings on logic. This exposition is based on a careful analysis of adequate source material—principally the *Expositio aurea super artem veterem* (Bononiae, 1496) and the *Summa totius logicae* (Venetiis, 1508). Through this careful analysis of source material and the generous citation of relevant texts, the author has tried to establish as objectively as possible his thesis that, contrary to the commonly accepted view, Ockham's theory of science is essentially Aristotelian.

William of Ockham has been known as the father of modern nominalism, whose skepticism and love of novelty led him to break with the traditional philosophy of the Middle Ages and to prepare the way for the empiricism of Francis Bacon, Locke, and Hume. The most prominent historians of philosophical thought have been generally agreed that Ockham attacked fundamental doctrines of all the great Scholastic thinkers, especially the doctrine of *universalia in re*, and thereby threw aside the metaphysical foundations of science as conceived by Aristotle. He has been looked upon, therefore, not only as a critic of mediaeval philosophy but also as one whose "criticisms were, consciously or unconsciously, aimed at Aristotle himself and at the very heart of Aristotelian metaphysics and theory of science."

This traditional view of Ockham has taken shape for several reasons. Historians have been influenced too much by the desire for historical continuity in philosophy and been led to see in Ockham, who wrote during the first half of the fourteenth century, a link between mediaeval and modern philosophical points of view. Then, no modern attempt has been made to determine just what Ockham's "nominalism" really was, through a careful analysis of his writing, in which his teachings were set forth. Finally, in the opinion of the author of this study, there has been a general misunderstanding of whom and what Ockham was attacking.

In his *Isagoge* Porphyry, under the influence of Neoplatonism, misinterpreted the logic of Aristotle. This misinterpretation consisted primarily in introducing the "problem of universals" as a metaphysical problem. The result was a confusion of logic and metaphysics—a confusion which was maintained and developed by Neoplatonist, Augustinian, and Arabic commentators of Aristotle. And it is this misinterpretation and confusion, still held by his Scotist contemporaries, that Ockham was attacking. He was concerned in keeping distinct what was distinct in Aristotle, namely, logic, discursive real science, and metaphysics. Far from being a critic of the Stagyrite, therefore, he was championing pure Aristotelianism against a false Aristotelianism "encrusted with alien elements derived from Augustinian tradition and from the Arab commentators." In other words, "Ockham, following a path which is the direct antithesis of Porphyry, may lay claim to being an accurate interpreter of Aristotelianism."

Porphyry's misinterpretation of the thought of Aristotle led to metaphysical logic and discursive metaphysics. In combatting this misinterpretation Ockham insisted on keeping logic and metaphysics distinct, as Aristotle had done. This enables us to understand his nominalism. He was a nominalist in logic, but a realist in metaphysics. In fact, "Ockham's logical nominalism is the *sine qua non* of his metaphysical realism." On the other hand, he is a thorough-going critic of nominalism, understood as a philosophy which would reduce all determinate concepts to the status of conventional signs. For Ockham as for Aristotle a discursive logic presupposes a real metaphysic.

This work is an excellent piece of research study, which may well serve as model for future works of this kind. All students will agree, I think, in praising the scholarly methods which the author has followed in his analysis of Ockham's writings. But as the author himself remarks, the establishing of his thesis that Ockham's theory of science is of essentially Aristotelian inspiration involves interpretation and appreciation. And it is here that students of philosophy will find much to criticize.

The author's knowledge of St. Thomas seems weak. This weakness is shown by repeated attempts to approach too closely the positions of St. Thomas and Ockham. Again, the author cannot see how St. Thomas can have meant a metaphysical distinction when he spoke of a "real distinction" between the faculties of the soul, with respect to the soul itself and to each other. Finally, it is surprising to read that "among the theories criticized by Ockham, it is hard to discover any that were,

in the sense in which he attacked them, essential to the philosophy of St. Thomas." Certainly the doctrines of the active intellect, the *species intelligibilis*, and *universalia in re* were essential to Thomistic philosophy, but rejected by Ockham.

Ockham defines the concept as an act of the intellect and says that it is a *natural* sign of "things," while the term is a conventional sign of the concept. But what is meant by a natural sign? Does it not imply some intrinsic connection between the sign and the thing signified, as when smoke is the natural sign of fire? What is this connection or link between the thing and the concept in the philosophy of Ockham? This is one of the important questions which is not answered in this study.

In conclusion, this is an excellent, scholarly study which has analyzed well the logical writings of an important mediaeval thinker. That students of philosophy will find much in it with which to disagree does not prevent the work from being a valuable contribution to our knowledge of the history of thought.

PHILIP S. MOORE.

*University of Notre Dame.*

*La pecia dans les manuscrits universitaires du XIII^e^ et du XIV^e^ siècle.* By JEAN DESTREZ. Paris: Éditions Jacques Vautrain, 1935. Pp. 104 and Album of 36 plates.

This is an interesting and scholarly work on an important institution of mediaeval book-making or manuscript-copying—the institution of the *pecia*. But it is much more than an exposition of the functioning of this institution; it is a study of its importance for mediaeval paleography and textual criticism, based upon a close examination of a thousand MSS. Father Destrez is the first to have studied thoroughly this institution and its importance for mediaevalists. His beautiful volume is divided into three parts. In the first part he describes the *pecia* and its functioning in the MSS. In the second and third parts he treats respectively of the institution of the *pecia* as an introduction to paleographical study of thirteenth and fourteenth century university MSS and to mediaeval textual criticism. An album of thirty-six plates is added, of which I shall say a word later on.

With the rise of mediaeval universities came an urgent need of rapidly multiplying copies of books. Students in great numbers were flocking to the centers of learning and demanding books old and new. The

monasteries, in which book-copying was until then almost exclusively carried on, were unable to meet this need, and a new institution gradually developed—the institution of the *pecia*. Nearby each university was established a *statio*, the mediaeval equivalent of a modern university press. When a work was to be put on the market or in circulation, it was first copied out on a number of separate and independent *pecia*, or cahiers of four, six, or more folios, formed by folding a piece of parchment upon itself. Taken together the *pecia* for a single work was called an *exemplar*. After being controlled by a commission of masters of the university, who assured themselves of its correctness and integrity, the *exemplar* was put on location with a *stationarius*, or one in charge of a *statio*. Anyone—professor, student, professional scribe—could then go to the *stationarius* and rent the separate *pecia* and take them home to copy. But no one could rent more than one *pecia* at a time, and he must needs have returned the first before receiving the second, and so on until the entire *exemplar* had been copied. By rotating the *pecia* in this way, several copyists could transcribe the same work simultaneously, and copies of a book could be rapidly multiplied.

This in brief was the institution of the *pecia*. The first MS in which it is known to have functioned is a MS containing the *Questiones* of Philip the Chancellor and dating from 1225-1235. Msgr. G. Lacombe found no indication of *pecia* in MSS of the works of Prepositinus of Cremona († ca 1210), and I have never noticed such indication in any MS of Peter of Poitiers († 1205) nor of any other Parisian master of the late twelfth and very early thirteenth century. Hence Father Destrez is safe in concluding that this institution began some time between 1210 and 1238 (the death of Philip the Chancellor), and most probably between 1225-1235. It continued until superseded by printing in the first half of the fifteenth century, though it already showed signs of decadence late in the fourteenth century. During two hundred years, therefore, university MSS were produced through the institution of the *pecia*. And only university MSS, that is, those containing treatises on subjects taught in the faculties of the university—Scripture, theology, philosophy, canon and civil law, medicine, and sermons—were copied in this manner. This is explained by the fact that only such works were in great demand and in need of rapid multiplication and by the fact that this institution was under university control.

But how can we recognize that a MS has been copied from the *pecia* of an *exemplar*? Generally, there is express indication of this fact. Such indication varies considerably in its elements, its place in the MS,

and its manner of being written, from one university to another and from one time to another. The author treats at length these variations and their evolution, which furnish valuable helps to the dating of MSS and to the establishing of their place of origin. Notable changes in the script of the text and in the color of the ink at regular intervals in a MS may reveal that it has been copied from the *pecia*, even though express indications of this fact are wanting. Father Destrez cautions, however, that for purposes of textual criticism only MSS bearing express indication of the *pecia* may be safely used.

The author makes an extensive study of the *exemplar*, based on a close inspection of thirty *exemplaria*. He treats its transcription, correction, and marketing. He gives special attention to the rewritten *pecia*, that is, to the replacement of a *pecia* destroyed or lost. These *pecia* were as a rule carelessly written, not being subject to the strict control of the university. In fact, so badly were they written that they became known as *pecia corrupta* or *pecia falsa*. All the characteristics of the exemplar, which were naturally reproduced in its copies, are precious for external criticism. Father Destrez calls attention especially to the date. In the considerations on the copies made from the *exemplar*, the author explains in terms of the functioning of the institution of the *pecia* such peculiarities as blank spaces, repetitions of text, overflow of text into the margins, omissions and inversions of text, which are found in these MSS. Any of these "accidents" could happen whenever a copyist was unable to obtain from the *stationarius* a *pecia* in its proper order.

In each university center a uniform type of MSS and a group of paleographical characteristics developed. These characteristics concern parchment employed, format of the MSS, number of folios in each cahier of these MSS, kind of letter used, color of the ink, position of the script on the page, manner of indicating the sequence of cahiers (signature and réclame), indication of *pecia*, length of *pecia*, indication of correction, ornamentation, and miniature. In the second part of his work Father Destrez studies these characteristics and points out what is peculiar to each of four universities—Paris, Bologna, Oxford, and Naples. A knowledge of these characteristics and their evolution in each university is obviously a big aid to determining the place of origin and date of MSS.

After long researches the author was able to conclude definitively that only one *exemplar* of a given work was placed on location in a given university center, even though several *stationarii* may have been operat-

ing there. But a different *exemplar* of the same work was placed on location in each university. Hence several *exemplaria* of a given work could have been copied. Also it was possible for two or more *exemplaria* to be successively placed on location in the same university or in different universities. Consequently, in approaching the problem of textual criticism from the point of view of the institution of the *pecia* it is necessary to consider four possible cases:

1. A work of which there was but one *exemplar* in a single university.
2. A work of which there was an *exemplar* in each of two or several universities.
3. A work of which there were two or more successive *exemplaria* in the same university.
4. A work of which there were two or more successive *exemplaria* in two or more universities.

An examination of these four possible cases forms the third part of this study.

An album of thirty-six plates accompanies this work. These plates serve as documentation. The author, however, is keenly conscious that this documentation is inadequate, and repeatedly promises a longer work in which he will present complete documentation and more detailed treatment of particular problems. On this point he seems a bit over-solicitous.

An explanation of the plates precedes the album, and a table of contents precedes this explanation. But no index is given. This lack of an index and a certain amount of repetition, prompted by the author's over-solicitude, are the only things I have found to criticize in this excellent work.

PHILIP S. MOORE.

*University of Notre Dame.*

*La Metafisica del Bello e dei Costumi di Arturo Schopenhauer.* By AURELIO COVOTTI. Naples: Casa Editrice Rondinella Alfredo, 1934. Pp. xiv + 206.

This volume is monographed No. 2 of the Collezione di Studi Filosofici, directed by Carmelo Ottaviano. It is a complementary volume to the already published *La Vita e il pensiero di A. Schopenhauer.* It is divided into two parts: the first is an exposition (chiefly) of the esthetics of Schopenhauer; the second deals with his ethics. Covotti has not

only an eager interest in but a real zeal for his subject. He presents it with a vigor seldom seen in a work so largely historical. There is no question but that Schopenhauer was a master in writing about art, poetry, painting and sculpture, and esthetic contemplation. He wrote in an attractive, winning style; his basic pessimism almost disappears under the spell of his flowing comment on the metaphysics of beauty, the nature and work of genius, the interesting, the beautiful and the sublime. According to Schopenhauer, genius is the capacity to be elevated to the realm of knowledge free from the control of cause: in this free knowledge all great works of art, poetry and even philosophy have their origin. The essence of genius is no mere "capacity for hard work" but consists in the perfection and vigor of intuitive knowledge. Genius begins with intuition and returns to intuition; this is best seen in the plastic arts and in poetry which produces its intuitions by means of the phantasy. But it must be remembered, as is noted on p. 192, that a man of perfect beauty is not necessarily a great sculptor, nor is a great sculptor necessarily a man of beautiful form and figure. It would be a strange requirement of a moralist that he recommend no virtue except one that he possessed.

Schopenhauer regards the task of the philosopher as one of reproducing the essence of the world in abstract concepts, in a clear and universal form, and of fixating this essence as a reflex image into definite, enduring concepts. The failure of Kant was to find a foundation for his "ought" or categorical imperative. Schopenhauer finds this foundation in the evil with which the world is afflicted; the suffering of others produces in us the compassion which is the basis of morals. The world is a hell; men are from one point of view souls in punishment. The devils themselves are their tormentors. The problem of the origin of evil is the great philosophical problem. Evil is found in our actions but they are not its source. Our actions are determined: our character is our own. Our responsibility rests rather on our character than on our actions. But our character is really our essence; therefore our responsibility rests upon our essence. Evil is thus based upon our essence; our existence is not so much a gift as a debt; a debt which we pay for by a life of unsatisfied wants, of desires that torture us, of miseries without number.

Thus is stated the case for pessimism. Art, interest, compassion, sympathy; these are the refuges of man against himself. Covotti has made a pleasing case for his pessimistic hero. But it is rather Covotti the literary artist who pleases than Covotti the thinker or the logician.

An index and bibliography would be a valuable addition to this book. How long will it be before Italian universities learn the importance of the extra work which these aids to the reader involve?

F. A. WALSH.

*The Catholic University of America.*

*The Catholic Tradition of the Law of Nations.* By JOHN EPPSTEIN. Washington, D. C.: Published for the Carnegie Endowment for International Peace by the Catholic Association for International Peace, 1936. Pp. xxi + 525.

Described by its author as "an attempt to provide what until now has not been available in the English language—a compendium of the teaching and tradition of Catholic Christianity upon international morality", this work is notably successful in fulfilling its purpose. Throughout the work reliance has been placed upon the authoritative sources of the Catholic doctrine. As a result, the book takes on, in part at least, the character of a book of readings representative of Catholic thought upon the law of nations and allied questions from the first centuries of our era down to the present. This fact gives an added value to the work, since it is so difficult for the ordinary reader to make use of the works of men like Vitoria, Las Casas, and Suarez, for instance, or even Augustine and Aquinas, or contemporary theologians and the papal encyclicals.

The work is divided into five parts. Of these the first part discusses the origins of the Christian doctrine upon peace and war; the second part, the ethics of war; the third, the preservation of peace; the fourth, the society of nations; the fifth, the place of nationality in the law of nations. Six appendices give documents for reference. These include résumés of the efforts of the Holy See in the cause of peace from the twelfth to the twentieth centuries. The texts of the covenant of the League of Nations, the labor section of the Treaty of Versailles, the statute of the Permanent Court of International Justice and the Pact of Paris are also given.

The method followed throughout the expository chapters is to rely chiefly upon authoritative writers upon the subject under discussion. The quotations from their works are supplemented by the author's own introductions, comments and, in certain instances, summaries and restatements. Not only have the better known authorities been used and

quoted, but extensive use has also been made of many important writers and works that are comparatively unknown to the general reader. The result is that a really impressive amount of material has been gathered in this volume and put into easily accessible form. For this reason among others, Mr. Eppstein has performed an important service to the student of the Catholic tradition of the law of nations.

The hope may be expressed that this work will have a stimulating effect upon its readers, both those who hitherto unacquainted with the doctrines exposed in it and those who know them and accept them. The work will more than repay those who are responsible for it if it should prove to be the occasion or cause of new and fruitful thought upon the principles of the great tradition of the Catholic law of nations. Those principles deserve not only to be better known but also deserve to be thought out clearly and completely in terms of the modern world. They demand, moreover, to be put into complete and courageous practice if that world is to be saved.

JOHN K. RYAN.

*The Catholic University of America.*

*Foundations of Morality.* By LUDWIG RULAND, (Adapted into English by T. A. Rattler, Edited by Newton Thompson.) St. Louis: B. Herder Book Co., 1936. Pp. x + 386.

This is the second volume of Dr. Ruland's Pastoral Theology. The first volume was reviewed in this journal some time ago and a final volume is yet to appear.

The title *Foundations of Morality* is somewhat misleading, since the author's purpose is evidently to present a comprehensive survey of the broad implications of morality rather than a complete and detailed exposition of moral principles. As the translator points out, Dr. Ruland has designed his work "as a help for priests to find their way from the knowledge of theoretic principles to the concrete realities of life." And although the present volume offers a fairly compendious treatment of most of the topics that are customarily included under the title, General Ethics, and those sections of Special Ethics which deal with the duties toward God, self, and lower creatures, his purpose is to supplement standard works on the subject rather than to offer something that will take their place. The emphasis throughout the book is upon the practical application of ethical principles to the needs of contemporary life.

The author is to be particularly commended for his earnest attempt to bring the findings of psychology, psychiatry, and mental hygiene to bear upon moral problems. Without wasting space upon the shortcomings of a narrow casuistic approach to morality, he opens a much broader view by striving to correlate the pertinent facts of both normal and abnormal psychology with the established principles of conduct. The first chapter on "The Moral Personality", with its sub-topics of adolescence, old age sex differences, the influence of nature, nervous disturbances, natural health and the like, is a bold attempt to place moral problems in their larger setting.

It is most regrettable that such a commendable purpose should be marred by errors of a particularly glaring kind. An instance in point is the following: "A reflex occurs when a stimulus issues promptly into expression, which is mostly criminal, or at any rate, gravely immoral." (p. 23) Another is: "The theory that individual souls differ in mental acumen and the power to elaborate impressions into mental images and abstract concepts, is no longer tenable. *These faculties are functions of the brain as a bodily organ, subject to the laws of heredity.*" (p. 29) Such statements as these cannot fail to increase rather than allay any suspicion that lurks in the conservative mind concerning the basic unorthodoxy of concepts that come from psychology or psychiatry. These assertions are bad psychology as well as unsound theology, and in a measure they tend to defeat the author's purpose of bringing these two disciplines into closer harmony. Moreover, the author betrays a lack of knowledge of the field when he introduces his excursion into the domain in medical psychology, will, temperament, affection, and experience with the following statement: "Instead of quoting several writers of high standing, we will better serve our purpose by stating the views of the greatest authority in this field—Kretschmer. (p. 11) This is a statement of personal preference, not an objective fact. When there is question of psychiatry, the will, and the emotions one misses the names of more eminent authorities. In particular the place would seem opportune for introducing the views of such widely known Catholic authorities as Moore in psychiatry and Lindworsky on the will and its training.

These deficiencies, however, are far from destroying the worth of the book, and Fr. Rattler has done a fine service by rendering it into clear and readable English. It will be welcomed especially by those who are teaching seminary courses in pastoral theology, as well as by the teacher of general ethics who is not entirely satisfied with the exclusively

rational approach to ethics and is desirous of introducing the college student to the broader aspects of Christian Morals. To the latter, the chapter on the "Restoration of the Moral Order" and the interesting historical approach to such basic ethical concepts as Law, duty, and sin will be of particular interest. Finally the young priest about to take upon himself the arduous responsibility of guiding souls will not only find help toward a better understanding of human nature, but many fruitful suggestions on the difficult subject of moral sermons as well.

TIMOTHY GANNON.

*The Catholic University of America.*

*A Mathematician Explains.* By MAYME I. LOGSDON. Chicago: The University of Chicago Press, 1935. Pp. xi + 189.

Anyone concerned with education must have observed with no little dismay that the period of life when intellectual progress is relatively easiest of achievement is at the same time the period when interest is most difficult to arouse and sustain. No branch of learning suffers more from this phenomenon than mathematics; its existence is the justification for books like that before us for review.

The fields "explained" range from arithmetic to integral calculus. The bulk of the work (chapters 2-7) is devoted to these; in addition there is an initial brief chapter on the nature of mathematics, and the book is completed by a chapter (8, contributed by Professor Bliss of the University of Chicago) on mathematical interpretations of geometrical and physical phenomena and a final chapter on mathematics and life. The end aimed at is stated (p. 2) to be . . . "by keeping the language as non-technical as is consistent with accuracy and clear thinking, and by showing many connections of mathematics with everyday life, . . . to give to the general reader a picture of what mathematics is, what it does, and (a very little of) how it does it."

The treatment of the following topics is worthy of special mention: Under arithmetic, the principle of position-value (compare the value of the 2 in 2 and 23), the consequent necessity for the use of zero, and the sophisticated nature of these concepts which renders them unlikely to be met with among primitive peoples; under algebra, a comparison of the *sentence*, declarative or interrogative, with the *equation*, identical or conditional ("the sentence is the unit for the expression of thought; the equation is the unit for the expression of a mathematical idea"

(p. 52)); under calculus, the characterization of the calculus as "the motion-picture machine of mathematics which catches natural phenomena in the act of changing" in contradistinction to the other fields "likened to the camera which shows a still picture of nature" (p. 105).

There is one striking paragraph in chapter 8 on the interpretation of geometry in a plane on the hypothesis of Riemannian (non-Euclidean) geometry, in reading which those who believe that in some way Euclidean geometry presents a "truer" explanation of geometry may receive a mild shock by being reminded that when a surveyor uses the formulas of plane geometry he is deliberately setting aside the spherical formulas in favor of a less accurate but more convenient set.

The final chapter, though it does not neglect to show the extent to which mathematics underlies the phenomena of nature, is especially designed to bring out its increasing use in the field of human relationships—the social sciences.

The illustrative drawings of Chichi Lasley, always apt and sometimes extremely amusing, further enliven the pages of this highly interesting book.

A. E. LANDRY.

*The Catholic University of America.*

*William Torrey Harris: 1835-1935. A Collection of Essays, including Papers and Addresses presented in Commemoration of Dr. Harris' Centennial at the St. Louis Meeting of the Western Division of the American Philosophical Society.* Edited by EDWARD L. SCHAUB. Chicago: The Open Court Publishing Company, 1936. Pp. 136.

A few years ago Charles M. Perry published some source material dealing with the St. Louis Movement in Philosophy.[1] Included in it are some very interesting letters of Nicholas Murray Butler and others which are very enlightening about the life and work of William Torrey Harris. Of him, Doctor Butler says "He was the one real, inspiring force in American public education with an influence and an authority that were truly nation-wide." Despite the opinion that the very per-

[1] *The St. Louis Movement in Philosophy, a University of Oklahoma Study.* University of Oklahoma Press, 1930.

fection of his work in education would make him soon forgotten, Harris has grown in stature since his death, and his name bids fair to becoming a permanent fixture not only in the history of American public school education, but also among the major influences affecting American philosophy. It was fitting, therefore, that the Western Division of the American Philosophical Association should give recognition to the one hundredth anniversary of the birth of Dr. Harris. At its thirty-fourth annual meeting (1933) the William Torrey Harris Centennial Committee was created with Professor Daniel S. Robinson as Chairman. The present volume is composed of the papers read at the thirty-sixth annual meeting in 1935. A Memoir by Dr. Henry R. Evans and an essay by Professor H. G. Townsend have been added.

The papers in general aim rather at historical appreciation than at critical estimation. The connection of Harris with education is traced by William Lowe Bryan who deals with the early history of the Indiana State Normal School. Dr. Evans in his appreciation records the work of Dr. Harris in the Bureau of Education. His work here has left a permanent mark on American education. He became United States Commissioner of Education in 1899; despite the fact that he had voted for Cleveland, he was appointed by President Harrison. Four years later Cleveland defeated Harrison and renewed the appointment of Dr. Harris. He remained in the government service until 1906 when he resigned.

Five of the essays are devoted to the work and influence of Harris upon philosophy. The story of the St. Louis Philosophical Movement reads like a romance of metaphysics. Through the influence of a lawyer and a stove-molder, Henry C. Brokmyer, a veritable school of philosophy arose in St. Louis. Brokmyer interpreted Kant and Hegel to Dr. Harris and some of his companions. This school gave many important names to America philosophy including Ira Divoll, Condé Pallen and indirectly Josiah Royce. The first journal of speculative philosophy in the United States was begun by Dr. Harris in 1867. Twenty-two volumes appeared, the last of which was published in 1893. In 1879 the Concord School of Philosophy was founded at Concord, Massachusetts, by Dr. Harris, Thomas Davidson, A. Bronson Alcott, Ralph Waldo Emerson, and F. B. Sanborn. The result has been that idealism has had brilliant exponents in the East, in the Middle West and in the Far West. It may be well said that Hegelianism in America became a potent influence under the stimulus given by Dr. Harris.

The influence which shaped the philosophy of Harris included besides

Hegelianism a certain amount of New England transcendentalism. This was modified by frontier influences as well as by the reading of Hegel. In addition the philosophy of the Orient, just as it influenced Alcott and Emerson, had an effect upon Harris. He saw in Hindu thought some real values for western culture, but never recognized the validity of its fundamental ideas.

The extensive bibliography shows clearly the growing importance attached to the life and writings of William Torrey Harris. Twelve pages of bibliography have been collected by Kurt F. Leidecker and inserted into this book under the title: William Torrey Harris in Literature.

This centennial volume is an important addition to the growing literature of the history of American philosophy. Dr. Harris is still remembered by most of the educators in the United States; his philosophy, however, continues to be a leading influence and a fruitful source of study.

F. A. Walsh.

*The Catholic University of America,*
*Washington, D. C.*

*Da Guglielmo d'Auvergne a San Tomaso d'Aquino.* By Amato Masnovo. Vol. II. Milan: Società Editrice "Vita e Pensiero," 1934. Pp. vii + 203.

In the first volume of this work Professor Masnovo gave a brilliant account of the troubles in the University of Paris and of the opinion of the Archbishop of Paris, William of Auvergne, on various subjects of philosophy. In this volume he continues the account of the development of philosophical opinion and theory. In the first chapter the issue concerning the opinion of Aristotle about the origin of the world is set forth. In his work on the Trinity he leans towards the reality of eternal, yet created, matter. Once more the battle rages between the Arabian, Jewish and Christian interpreters of Aristotle. Sometimes William leans to the side of Avicebron and sometimes he turns away from him. As in the Summa Gentiles the views of Avicenna are examined at length.

In chapter four the opinions of those who sided with Avicenna are examined. First of all Alexander of Hales is quoted as making the distinction between the knowledge which we have about the origin of the world drawn from philosophy and the knowledge which we have

from revelation. He also distinguished between the creation of primordial matter in an unorganized and loose manner and its reduction to a better condition and its orderly distribution. Thomas Aquinas acceded more or less to this opinion.

Chapter five offers the solution to these problems as made by the celebrated Archbishop of Paris. The solution must be sought in the Divine Wisdom. Our human knowledge is derived from reality, through the mediation of images which we know. Divine knowledge is identified with the Divine Essence, which is at once the image of itself and of all things. It is therefore, the archetype of the world. In giving reality to this world the Divine Archetype was manifested, and showed forth the pure goodness of God. This goodness, however, was not exhausted in the creation of this world; nor did it operate by reason of any internal necessity.

Further problems, especially in the field of knowledge, are treated in the succeeding chapters. These are well known in the history of philosophy; through the pages run the names of John of Salisbury, Abelard, Robert Pulleyn, and others. William of Auvergne remains the central figure against Avicenna, to whom the school of Chartres inclined, and reiterated the doctrine of the creation of the world in time. He then undertook to overthrow the reasons brought forward by Aristotle for the eternity of creation. He points out that the argument of Aristotle proceeds on the basis that the idea of being is predicated of God and of creature univocally. As a matter of fact, it is equivocal. The argument drawn from the necessity that contraries should exist is only valid when these contraries are truly under the same genus. When equivocation intervenes they are no longer under the same genus.

By these and many other penetrating analyses William of Auvergne develops a philosophy which, while fundamentally Aristotelian, lays a good foundation for the work of the Scholastics who were to follow him. His struggle was against naturalism. He was engaged with living adversaries of the Latin and Christian world. Security could only be found when doubts were banished. From the problem of the material universe the history of philosophy at this time goes on to the question of the angelic or intermediate intelligences. Of these Doctor Masnovo will treat in his third volume.

F. A. Walsh.

*The Catholic University of America,*
*Washington, D. C.*

*Concerning Knowledge.* By HUGH W. SANFORD. New York, N. Y.: G. P. Putnam's Sons, 1936. Vol. I and II, pp. xx + 779.

It is of interest to note that the author of this work is listed in the latest edition of "Who's Who in America," Vol. XVIII, 1934-35, as the president and manager of an iron works in Knoxville, Tenn., and as the director of several corporations. A busy industrial life that reaches back to graduation from Harvard in 1900 is likewise recorded. Nor is this Mr. Sanford's first endeavor in the field of publication. Five years ago a two-volume work, "Science and Faith," made its appearance, kindred in size and scope to that under consideration. Smaller volumes of merit, dealing with economics and government, also bear his name. From all this it might be judged that "Concerning Knowledge" runs along lightly in a popular vein. This is not the case. A wide acquaintance with philosophical systems, with scientific and mathematical theory is evinced. The author is possessed of a vigorous mind that seeks depth and revels in originality. But the latter virtue becomes a vice. There are errors both of substance and method that point to an unacademic training. Too much is attempted and too little is actually proved. All over the field of knowledge the author charges, challenging those whom he chances to meet. Telling blows are delivered at times but in many of these skirmishes he is cleaving the air. And in the establishment of his own intricate theory far too commonly simple assertion is paraded as well-founded proof.

The present work, as its title suggests, is concerned with the old but ever important question of knowledge and its basis. In the preface the author asks:

> What is knowledge? Is there much that we can know? Can we know anything exactly? If not exactly, how accurately may we know? What is our best method of acquiring an understanding? It would appear that up to this point we have made the tacit assumption that knowledge is possible for us. Is this assumption valid? How accurate is the knowledge which we now suppose we have? Does true knowledge correspond at all with what we now think we have scientifically—that is, from mathematics, plus experience, plus an hypothesis, plus another confirming experience? (p. xix)

And a little later he adds:

> Now this quest for knowledge necessarily brings us to thoughts concerning what matter is; what mind is; what sensations are; what the symbols representing sense-data, such as color and taste and musical pitch might be. We must also try to understand the significance of these

symbolized sensations, and how they associate matter with mind. We must try, too, to identify their source. And finally, we must if it is possible to do so, reach a rational concept of the truth of the relationship existing between matter and mind . . . (*ibid.*).

Sixteen lengthy chapters and an appendix that discusses the respective merits of the quantum and the wave theory of radiations constitute the two volumes. The last chapter is a summary; the second last, a brief digest of individual philosophers from Anaximander to William James, in which St. Thomas receives a page of treatment that is not unsympathetic. Four chapters (X-XIV), or about two hundred pages, are devoted to an examination of Einstein's theory, for which the author has a particular aversion. The first ten chapters are given over to criticism and constructive effort intermittently, in which the main stream frequently fades from view as tributary after tributary is minutely explored.

We may designate briefly the critical and constructive aspects of the work. In the former, scientific method is subjected to a spirited analysis. The failure of Newtonian physics to come into contact with unitary reality, an error that the new physics accentuates, is censured. The empirical and materialistic systems which are rooted in a glorification of science are decried for their narrowness of vision. Mathematics holds a particular fascination for the author; to the sins of mathematical method he returns ever and anon. The mistake of the mathematician in identifying his abstractions with the real world as such, his failure to attach to unitary reality the mathematical unit which precludes the expression of the real in fractional terms, the impossibility of transposing values accurately in even the simplest equations, all this is dealt with at considerable length. In a special chapter Aristotle's laws of thought are criticized, while limitations are found to their veridical application. These laws, identity, excluded middle, and contradiction, Mr. Sanford states inaccurately. For example, the law of contradiction is made to read: No statement is both true and false. (p. 323) Philosophers of every description are scrutinized and criticized ultimately with the author's own view of knowledge and the knowledge relation as a gauge.

A brief sketch of the constructive portion of the work will give tone to the foregoing and indicate the basis upon which the author would have the whole knowledge structure find support. It is a spiritualistic system that is advocated. Beginning in a dualism and ending in a type

of idealistic monism, the evanescence of matter is witnessed along the way. Knowledge is possible only upon the supposition that there is a dualism of conscious mind and moving matter. Investigation into their relationship must start with the definition of the ingredients of the universe. Not events in gross but the true unitary reality must be studied. It is here that knowledge in its every department has erred in varying proportions in the past. Science has discovered the granular character of matter; reason should have been familiar with it from the start. Everything centers around the unit of matter. It is infinitesimal, spherical, solid, impenetrable, possessed of no qualitative aspects, of itself inert and passive, emitting no radiation, and occupying zero time and space. Gross structure which we commonly call matter is composed of such units in mere quantitative arrangement. Matter and matter void make up the finite world. Qualitative differences are peculiarly mental. Motion being spiritual cannot be a native attribute of matter; it is the mind's purposeful activity in the material world. It is in the erection of this part of his theory that Mr. Sanford runs afoul of physical science and its theory from Newton to Einstein and Planck, but he cheerfully faces the issue and laboriously constructs his own explanation of kinetic energy, gravitation, atomic structure, etc. It is here that he presents some discussions that are of technical value.

Mind itself the author sees as a dualism. The mind of man has two distinct compartments, the conscious and the subconscious. The latter is all important; it alone is in direct contact with unitary reality through subconscious experience. Conscious mind is in contact with gross matter only, through sense data which are but qualitative tags, symbols of the aggregate effect of a myriad of unitary events, framed by the subconscious mind so that the conscious mind may possess a representation of external reality sufficient to permit the safe direction of man's living organism and the practical control of the environment. This latter is the conscious mind's chief task. The principal quality of mind is to create purposefully planned motion in matter. Man's mind is limited at this, and thus the presence of a Supreme Dynamic Mental Cause is readily visible in nature. The control of matter by mind, which may be designated as the very attribution of mind itself, is ever going forward. This is the true evolutionary process in the world, leading to a monism of mind, the mind of God, of which we, as finite creatures, possess a portion. Knowledge thus becomes readily explainable. Mind simply knows and recognizes its kind in nature. The author offers this system of thought as a panacea for every ill that

afflicts the race, as the solvent of all the major philosophical problems that have divided thinkers since the dawn of thought.

And what are we to say to all this? No one will deny the bewilderment of modern thinkers, or the crying need for a detailed and basic study of the whole knowledge structure. Who can forget Eddington's frank confession, so symptomatic of the whole scientific picture: "There is something radically wrong with the present fundamental conceptions of physics and we do not know how to set it right." The mass of fresh data which science continues daily to present finds scientific thinkers unable to integrate it. Mathematical physics seeks to assume command and the real world fades farther and farther from view. The superficiality and native weakness of empiricism was never more apparent. It is no wonder that thinkers are turning to fundamental problems of knowledge as was done in the seventeenth and eighteenth centuries. Conditions then and now admit of a ready comparison. But the mere determination to be basic is no guarantee against preconceived notions, as Locke and Hume have abundantly shown. It is impossible to cross swords at length with Mr. Sanford in a review of this kind, nor is it necessary. His whole theory is centered around the notion of unitary reality, and the subconscious capacity of the knowing mind. A wealth of data runs through his volumes, but there is an amazing lack of proof for his fundamental stand. It is presented practically with this sole recommendation,—it works, and it brings an additional measure of intelligibility to the mechanical world. The author's show of learning and his zealous ways cannot remedy this essential defect. Now as never before must the philosopher if he would assist in dissipating the current confusion, "sit down before fact as a little child and be prepared to give up every preconceived notion," the advice which Huxley gave so liberally and then defied. A system that lacks evidence, no matter what other virtue it may claim, must ultimately be reduced to the status of assumption; it becomes, as a rule, just another monument to the imaginative powers of the human mind. And this is our ultimate verdict concerning Mr. Sanford's work.

JOSEPH M. MARLING.

*Saint Charles Borromeo Seminary,*
*Carthagena, Ohio.*

*Introductio Generalis ad Philosophiam et ad Thomismum.* By L. De Raeymaeker. New and Enlarged Edition. Louvain: 1934. Pp. vii + 199.

There are two parts to this well-known work. The first part is made up of the brief history of philosophy. Schools covered are those of ancient Greece, of the early and mediaeval Christian period, of the modern period, and of recent times. Added to this is a section on the nature and definition of philosophy, together with an account of its divisions. An exceedingly useful bibliography is attached to this section; the proceedings of the International Congresses of Philosophy from 1900 to 1934 are noted. Special mention is made of Catholic Congresses from 1888 to the Thomistic International Congress in Rome in 1925. Students who are seeking a list of the great libraries and collections of philosophical material will find an extensive list of these on pages 111-112. A list of periodicals, rather brief but nevertheless useful, occupies pages 112-114. The work is enhanced by a number of reproductions of paintings representing famous philosophers, from the Athenian School of Raphael to Thomas Aquinas.

The second half consists of an Introduction to Thomism. A brief life of St. Thomas is given in Chapter Second; his works are listed at length with a brief description of each work. In the footnotes the varying opinions of P. Mandonnet, M. Grabmann and others about the authenticity of certain works are carefully noted. A very useful addition lists the printed edition of the works of St. Thomas issued in the nineteenth and twentieth centuries. The various Thomistic Schools are given their historical setting and the Neo-Scholastic Revival of the nineteenth century is rightly given more extended treatment. A striking portrait of Cardinal Mercier faces page 161. The author has also collected a list of universities and Catholic faculties in which Thomistic Philosophy is taught; curiously the control of the Faculty of Sacred Sciences at the Catholic University of America is assigned to the Missionary Society of St. Paul the Apostle. Four pages are devoted to enumerating Neo-Scholastic periodicals. The New Scholasticism is listed as of 12-20 Hopkins Place, Baltimore, Md. Bibliographical material has been gathered filling nearly twenty pages more. Many will find the list of Scholastic manuals rather useful for quick and ready reference. Students preparing for comprehensive examinations will find this book full of the factual information which they so frequently desire.

*The Catholic University of America,*
*Washington, D. C.*

F. A. Walsh.

*Metaphysica Generalis.* By L. De Raeymaeker. Volumes I and II. Louvain: 1935. Pp. 530.

This is a new edition of the celebrated Louvain Professor's General Metaphysics. It deals with being as such, both in itself and in its transcendental properties. It then passes to the subject of the one and the many dealing with act and potentiality and the causes. The second part is composed of historical notes. These are arranged, not chronologically, but according to the various titles treated in metaphysics. This arrangement is very effective. One is able at a glance to cover all the thought that has been exercised upon an issue through the ages.

Perhaps the best single instance of this is the treatment of substance and accident, pages 400-423. In this brief compass we have the doctrine of Aristotle and of the major Scholastics, St. Thomas, Duns Scotus, Ockham and Suarez. He then passes to the moderns who are classified by their tendencies to rationalism, to empiricism, to criticism, to positivism and to intuitionalism. Under these classifications we find the names of Descartes, Malebranche, Spinoza, G. W. Leibnitz, Locke, Berkeley, Hume, J. Stewart Mill, Wundt, Taine and Bergson.

The quotations from authors are regularly in the language in which the originals were written. Thus we find many quotations in English and in German put as footnotes to the Latin text. A student who has travelled the route of this Metaphysics will not only be trained in metaphysical content and method, but will have an excellent introduction to the whole of present-day thinking.

F. A. Walsh.

*The Catholic University of America,*
*Washington, D. C.*

*An Introduction to Contemporary German Philosophy.* By Werner Brock. Cambridge: The University Press, New York: The Macmillan Company, 1935. Pp. xx + 144.

J. H. Muirhead, in his Foreword to the volume under consideration, makes known that the book is the elaboration of a series of lectures delivered by Werner Brock at the University of London. The author unifies his lectures, and the book into which they grew, by the important question, "What, in this age of science, is the task of philosophy, if any task still remains for it beyond preservation and development of logic and the study of its own history?" The problem comes as the result

of the breakdown of Hegel's philosophy, due, in turn, to a rejection of idealistic speculation in general and of the flaunted autonomy of the separate natural and humanistic sciences. To understand fully the character of present-day German philosophy, one must, according to Brock, grasp its setting in the German Humanism of the late eighteenth and early nineteenth century and in the rapid development of the sciences in the late decades of the past century. From a short presentation of that setting he passes on to the consideration of Husserl, Dilthey and Weber, who, he considers, have achieved a third stage in post-Hegelian thought. The first two stages were an attempt at a philosophical synthesis of scientific results as seen in the works of Fechner, Lotze and Hartmann, and the formulation of philosophy's task as epistemology, exclusively. Husserl, Dilthey and Weber, though they failed to produce a new philosophy, have pointed the way for others to follow by formulating anew the problems of philosophy in regard to life and a world-view beyond science; by discovering new and useful methods of philosophical analysis.

The source of a second stream of thought Brock finds in the works of Nietzsche, whose criticism of science and whose philosophy of life profoundly influenced the thought of Spengler and Scheler and Klages in the contemporary era. To the Dane, Sören Kierkegaard is attributed a decisive influence on Protestant theology through Karl Barth, and a determining force upon the thought of Jaspers and Heidegger, looked upon by Brock as the leading German philosophers of the last decade and as exponents of a third distinct trend of thought.

Passing notice is given to the phenomenological school of Pfaender, Geiger and Reinach; to the Dilthey school of Misch, Nohl, Spranger, and Freyer; to the Gestalt philosophers, Koehler, Wertheimer and Koffka; and to the scientific philosophers, Schlick, Carnap and Reichenbach.

In a concluding chapter, which fully reflects the labyrinth that is present-day philosophy, Brock puts forth a list of the forces which are at work in the shaping of human destiny. Philosophy's rôle is yet uncertain: will it interpret the whole of existence so as to give strength and significance to human life? or will it manifest itself through minute investigation of specialized problems? And, viewed in another way, Brock's problem-question is: will it be Christianity or philosophy which will guide the human race? "Philosophy, by its unlimited search for truth and its will to freedom, stands opposed at least to Christian dogma and to the principle of the authority of divine revelation, inher-

ent in it," contends the author. Similarly, one might comment, specious, apodictic, unproved assertions of philosophers, by their very nature block the search for truth. Where is the evidence that philosophy and Christian dogma and revelation are opposed?

Of the philosophy which is the basis of the present political and social life of post-war Germany little is said. Nor is any space devoted to the Scholastic revival in Germany. The author pleads lack of space and time as explanation for the omission of treatment of some trends of thought. His book is then not what its title claims but simply his view of a few important movements. It is not an attempt to marshal the entire list of philosophers of the period called contemporary nor an attempt to criticize trends of thought, nor a complete survey of diverse schools, but rather a description of what the author sees as the outstanding views in German philosophy today, in their genesis and in their logical conclusions if these are in evidence, or in their general trend.

To the excellent treatment of some of the prevailing tendencies, Brock appends a descriptive bibliography. His volume should do much towards stimulating interest in the speculative thought of Germany of yesterday and today.

HENRY A. LUCKS.

*Saint Joseph's College,*
*Collegeville, Indiana.*

*Primitivism and the Idea of Progress.* By LOIS WHITNEY. Baltimore: The Johns Hopkins Press, 1934. Pp. xxi + 343.

This "contribution to the history of primitivism" is confined in scope, as its sub-title indicates, to "English popular literature of the 18th century." It is none the less important to the philosophical fraternity, however, because the amateur and informal philosophy of laymen in popular writings has always had a wider audience and hence more practical effect than the erudite speculations of the more original academic and professional thinkers. Unless an idea acquires some currency or vogue it may as well be in a vacuum and the direction of the intellectual wind, so to speak, is best determined by consulting the literary middlemen (p. 5; p. 326) who are the vehicles of the dissemination and percolation of new notions. Today who reads Einstein or Freud in the original sources? Moreover, as Professor Lovejoy points

out in the Foreword (p. xx), it is not so much the systems of philosophers, as such, that "are the dynamic factors in the general movement of thought" but rather specific thought-complexes or separate conceptions. This view has motivated the whole series of "contributions to the history of primitivism" which is edited by Arthur O. Lovejoy, George Boas, Ronald S. Crane and Gilbert Chinard and of which the present work is a not unworthy member. The idea of primitivism is much easier to disentangle from the skein of thought in any mental milieu, "climate of opinion" or *zeitgeist* than the doctrine of romanticism (or classicism), for instance.

Primitivism is a retrospective nostalgia for the conditions of one's racial infancy or original state (chronological primitivism) or a discontent with the artificialities of civilization and a preference for the simple and natural life of contemporary savages (cultural primitivism). Hence the "let's go native" formula, which the mariners incited by their tales of the South Seas, and hence the "noble savage" appellation for the American Indian. Even "theriophily" or "animalitarianism" which was the "tendency to represent beasts as more admirable, normal or fortunate than humans" enjoyed vogue in 17th century French thought and earlier in Montaigne and others and is a sort of "infra-primitivism" (Boas, *The Happy Beast,* p. v).

Miss Whitney provides an abundance of illustrations in popular literature of the opinion that man is depraved, perverted, corrupted and degenerated by wealth and luxury and that the simple regimen, the idyllic life of savages is more natural and more virtuous. If primitive purity, innocence and benevolence are to be found only among cannibals, aborigines and savage barbarians, it is because the prosperity and artificiality and sophistication of civilization have spoiled what is innate or natural,—in such a tone many writers preached. And primitivism flourished under sentimentalism no less than under intellectualism or rationalism for the innate ideas of virtue or the natural light of reason were no more hospitable to it than instinct, impulse, sensibility, benevolence and other categories and norms of the ethics of taste and sentiment.

The idea of progress is opposed to primitivism and the author shows the interplay and conflict of the two conceptions. Progress is a prospective category of thought and appeals to the liberal or radical type of mind which hopes for and imagines the future instead of sighing for the past. In depicting the struggle between primitivism and progressivism, the many contradictions and inconsistencies of the popular

writers and minor philosophers are exposed. That there should be confusion of philosophical ideas in the novelists is perhaps not surprising because in their efforts to be fashionable they frequently advance incompatible theories both, or all, of which happen to be in the air at the time. Then, too, any theory which gains public currency is usually misunderstood. Sometimes, of course, there is a conscious effort made toward compromise or reconciliation but the number of logical atrocities and monstrosities is amazing. A few examples of the combining of two incongruously divergent lines of thought deserve mention here.

The idea of progress or theory of perfectibility was the logical concomitant of associationism and utilitarianism, but while the utilitarianism of Bentham was "almost necessarily linked" with progressivism, that of Hume and Smith, with its emphasis on sympathy and benevolence, implicitly favored a sentimental primitivism. Again, the ideal of simplicity which naturally tends toward primitivism was inconsistently allied with progressivism by Godwin, Paine and Robert Bage; even Hartley failed to see that increasing complexity or diversification is implied by his associationism and his embryonic and latent progressivism. Priestley did not make this mistake; nor did Burke, who is here shown to be more progressivist than he is usually regarded.

Likewise, benevolence, which was a primary law of nature for Charron and which was championed by the opponents of Hobbes, provides in the sentimental ethics of Hutcheson and Hume a basis for primitivism, but it also led via Godwin's tortuous theorizing to progressivism. Paradoxes in Godwin's views are clearly indicated. It would seem that Godwin gave broad interpretation to Emerson's "consistency is the vice of little minds." (In his *Development of Political Ideas,* F. J. C. Hearnshaw traces the inconsistencies of Godwin, Paine, Rousseau and others.)

Finally, the principle of continuity or the doctrine of the chain of being, of a scale or gradation in a Nature of plenitude and fecundity (a theory which Hobson, in his *Domain of Natural Science,* shows to have been held by several early modern scientists) had been associated with the traditional Aristotelian doctrines of teleology and of the fixity of species. It had also been affiliated with primitivism but the superficial resemblance between the chain of being and evolution and the very notion of a hierarchy and gradation of increasing perfection provided in popular literature a "favorable environment" and "fertile soil" for evolutionism and progressivism.

The defiance of logic by Lord Kames, Lord Monboddo and others mentioned above, besides the propagandists-in-fiction enumerated by Miss Whitney, the mental chaos of the 18th century mind, make one wonder whether such is not a feature of the modern mind. Wrote Paul Valéry (in *Variety,* p. 11): "The disorder of mental Europe consisted in the free co-existence in all cultivated minds, of the most dissimilar ideas, the most contradictory principles of life and knowledge. That is precisely what characterizes a modern epoch and the Europe of 1914 had perhaps reached the limit of this modernism. Every brain of a certain rank was a focus for every nationality of opinion; every thinker was a World's Fair of thoughts."

DANIEL C. O'GRADY.

*University of Notre Dame.*

# CURRENT PHILOSOPHICAL REVIEWS AND BOOK NOTES

*Harvard Theological Review*—Vol. XXIX, No. 3: July, 1936.

**James Bissett Pratt:** God and the Moral Law. A statement of the problem of the relation of God to morality and some of its difficulties. The answers given by Sorley, Hartmann, Bradley, Bosanquet and Wieman are considered briefly. The author is ultimately in agreement with Bradley. **Julius Seelye Bixter:** Josiah Royce—Twenty Years After. Royce was much more than a stimulating pedagogue: he brought the dominant European philosophy to America and restated it for American ears. He came to idealism through voluntarism. Contrasted with James he insists that philosophy be critical and subject all life to the laws of mind. James claimed that we should take experience as it comes. American philosophy of religion begins with a Roycean absolute and is forced to return to it.

*The International Journal of Ethics*—Vol. XLVI, No. 4: July, 1936.

**C. Delisle Burns:** War and Citizenship. The duty of a citizen to support a war is a moral question which has been settled for most men by tradition. It is held that the citizen's duty to serve in war is limited and confined to a duty subordinate, as any state is subordinate, to the moral obligation of loyalty to a world-order including all men. **Dorothy Walsh:** Ethics and Metaphysics. Ultimately, no ethical theory can be adequate without the explicit statement of its metaphysical beliefs. This issue also contains: **Edward Scribner Ames:** Liberalism in Religion. **Clifford Kirkpatrick:** The Measurement of Ethical Inconsistency in Marriage. **S. K. Langer:** On a Fallacy in "Scientific Fatalism." **J. H. Muirhead:** Unionism and Separatism in Ethics.

*The Monist*—Vol. XLVI, No. 2: July, 1936.

**Ledger Wood:** The Principles of Philosophical Criticism. These are consistency, relevancy, and adequacy. "Criticism and construction are two inseparable moments of the philosophical method. Criticism without construction is barren and futile; construction without criticism is mere dogma." **John Wright Bucham:** Duality and Dialectic. Forms of duality discussed are contradiction, contrariety, correlation, polarity or contrapletion and compresence. It is contended that dialectic rightly obtains only in the polar, or contrapletive, form of duality. **Karl Britton:** Of Public Objects and Private Objects. Physical objects are public in that they manifest themselves at the same time and in the same way to different persons. The manifestation is said to be private, for its character and existence depend upon factors peculiar to each percipient. This issue also contains: **H. B. Loughnan:** Emergence and the Self. **Leo Abraham:** What is the Theory of Meaning About? **Benjamin Ginsburg:** Mechanism and the Methodology of Science. **Oliver L. Reiser:** Modern Science and Non-Aristotelian Logic.

*The Philosophical Review*—Vol. XLV, 4, Whole No. 268: July, 1936.

**Moritz Schlick:** Meaning and Verification. The views of a logical positivist upon this subject. It is a main thesis of true positivism "that the naïve representation of the world, as the man in the street sees it, is perfectly correct; and the solution of the great philosophical issues consists in returning to this original world-view, after having shown that the troublesome problems arose only from an inadequate description of the world by means of a faulty language." **Ledger Wood:** Concepts and Objects. The concept is not objective in the sense of having a universal as its literal object. It is objective in so far as it means a multiplicity of particulars, qualitatively or structurally similar. Conceptualism is a genuine alternative to realism with its abstract universals and nominalism with its inability to transcend the particular. **Whitney J. Oates:** The Doctrine of the Mean. History and significance of the doctrine. It is concluded that in Plato is found the widest application of the doctrine, while in Aristotle it is both an image and an entity as essential in several distinct fields and also a method of explaining the formal cause. **John Somerville:** The Relativity of Truth: A Definition. Truth is defined in terms of method: "Truth is one attribute of conclusions, namely, conformity to the conditions of the method intended to generate the conclusion. Falsity is a violation of the conditions of that method which is intended to produce the conclusion."

*Philosophy*—Vol. XI, No. 43: July, 1936.

**Gilbert Murray:** Vice and Illusion. A discussion of the psychology of vice. Victims of vice, being out of touch with their social environment, plunge into self-glorifying illusions. **W. G. de Burgh:** Spinoza. Spinoza's geometrical method of expositions gives a misleading impression of dogmatism and conceals his patient inquiries. Among the influences felt by Spinoza are the Neo-Platonic tradition, mediaeval thought, both Christian and Jewish, and Descartes. Moral experience is inexplicable on the basis of Spinoza's metaphysics. **J. L. Stocks:** Reason and Intuition. The meanings of these terms; reason is dependent on intuition and intuition on reason. Thought starts from the immediate and ends in the totality, which is and must be individual. Reason falls between these two poles and is incidental to the passage of thought from one to another. It is conditioned by both. This issue also contains: **K. Henderson:** The Mind's Love for God. **Margaret MacDonald:** Russell and McTaggart. Also recent philosophy in France and Germany.

*The Journal of Philosophy*—Vol. XXXIII, No. 14: July 2, 1936.

**Waldo Jewel-Lapan:** Perception and Reality. We have knowledge in the field of pure sensation and in science; in the realm of particular events we have knowledge only when several perceptions mutually corroborate each other. Even then error is possible. Sensations and perceptions are processes and not existences. They are therefore irrelevant to such ontological qualifications as "subjective" and "objective." **Clifford Barrett:** In What

Sense Are Values Objective? In the sense that such things as *Life* are objective. Like life, the order of values appears as a form of systematic relationship between organisms of human complexity and their environment.

*The Journal of Philosophy*—Vol. XXXIII, No. 15: July 16, 1936.

**Harry Ruja:** The Logic of Logical Positivism. The contention that logical positivism has achieved success in developing a theory that satisfies the just claims of logic and is also congenial to the empiricist temper is questioned. The method and results of the *Wiener Kreis* and certain other logicians are subjected to criticism. Logical analysis involves and ends in metaphysics. Carnap's statement, "*In der Logik gibt es keine Moral*" is not justified. **A. P. Ushenko:** Predication of Existence. Existence may be predicated in an important sense and in a trivial sense. In the former it amounts to the assertion that some adjectives are realized. It is not meaningless even in the trivial sense.

*The Journal of Philosophy*—Vol. XXXIII, No. 16: July 30, 1936.

**John A. Clark:** A Definition of the Good. By the good is meant reasonable action. A way of acting is reasonable when, seen in prospect, it is adopted as the decisive issue of some course of practical deliberation which has been carried on throughout in an attitude of open-mindedness to weigh fully all considerations of whatever type that could exhibit relevance to such deliberation. Reasonable action, the good, is the result of reasonable decision. **A. Whitcomb Hess:** Is Free Speech a Right? Free speech as unregulated behavior ignores the teleological principle without which freedom itself can have no application, for liberty is not a genuine end of knowledge but only a condition of its pursuit. To insist that men shall be free to say whatever they think is unnecessary, beside the point and in its effects a betrayal of the mother-tenet of liberalism.

*The Journal of Philosophy*—Vol. XXXIII, Nos. 17 and 18: August 13 and 27, 1936.

The entire number is a bibliography of philosophy for 1935. Under eight headings 1543 titles are listed.

*The Journal of Symbolic Logic*—Vol. 1, No. 2: June, 1936.

**W. V. Quine:** Set-Theoretic Foundations for Logic. The purpose of this paper is to present a new system resembling that of Zermelo but more economical and containing as formal postulate only the extensionality principle. Also: **Arnold F. Emch:** Addendum to the Article *Implication and Deducibility.*

*Divus Thomas*—Vol. XXXIX, No. 4: July-August, 1936.

**M.-H. Laurent:** *Autour du procès de Maître Eckhart.* The first installment of this article gives the documents that are preserved in the Vatican Archives. The article will give a complete edition of the various documents hitherto published only fragmentarily and in various reviews difficult to procure. **A. Rainerl:** *De Possibilitate Videndi Deum Per Essentiam.* The

subject is treated not historically or exegetically but only speculatively and critically. Two questions are considered: 1) *Utrum possit sola ratione demonstrari, esse homini logice seu absolute possibile videre divinam essentiam prout in se*; 2) *Utrum possibilitas logice sumpta ponat in homine potentiam aliquam realem, et quid ipsa sit.* The Thomistic doctrine is developed in this article. (To be continued). Also in this issue: **G. M. Perrella:** *"Cognoverunt Eum in fractione panis."*

*Gregorianum*—Vol. XVII, Fasc. 11: 1936.

**P. Siwek:** *La structure logique de l'induction.* Certitude arising from induction does not arise from necessity or faith, but because in particular facts there is a pervading dynamism or *virtus* which continually creates and sustains them and also transcends them. This *virtus* constitutes the reality of physical law, or of nature. This nature exists in particular things intermingled with individual elements. Hence it is the task of induction to take note of the accidental and point out the nature or law. **A. Rozwadowski:** *De optimismo universali secundum S. Thomam.* A documented study of the Thomistic doctrine of relative or moderate optimism. In this doctrine is found the Thomistic answer to the problem of evil. *Malum permittitur a Deo nonnisi propter bonum, propter maius bonum, propter maximum bonum universi.* Thus the problem of evil is converted into the problem of the good. This issue also contains. **Ch. Boyer:** *Reflexions sur la Constitution "Deus scientiarum Dominus."* **T. Spacil:** *Fides catholica S. Ioannis Chrysostomi et recens quoddam opus auctoris orthodoxi.* **F. Pelster:** *Die aelteste Abkurzung und Kritik vom Sentenzenkommentar des hl. Bonaventura ein Werk des Richardus Rufus de Cornubia (Paris 1253-1255).*

*Gregorianum*—Vol. XVII, Fasc. 111: 1936.

**L. W. Keeler:** The Vulgate Text of St. Thomas's Commentary on the Ethics. The origin and correctness of the current text of St. Thomas's commentary, of the translation of Aristotle, whether William of Moerbeke revised Grosseteste's translation and the divisions of Aristotle's text are the principal subjects discussed in this study. This issue also contains: L. Gomez Hellin: *El tratado inédito "De gratia" del Cardenal Juan de Lugo, según un códice salmantino.* **T. Spacil:** *Fides catholica S. Ioannis Chrysostomi et recens quoddam opus auctoris orthodoxi.* 11. **F. Pelster:** *Die Uebersetzungen der aristotelischen Metaphysik in der Werken des hl. Thomas von Aquin.* 111. **J. De Blic:** *La date du sermon de saint Augustin "in psalmum 31"* (ML 36, 257-275).

*Philosophisches Jahrbuch*—49. Band. 1./2. Heft: 1936.

The following articles are contained in this issue: **Joseph Geyser:** *Zur Grundlegung der Ontologie.* **Jakob Barion:** *Ueber die Bedeutung der Analogie für die Metaphysik.* **Siegfried Behn:** *Ueber kanonische Gestalten.* **Heinrich Lützeler:** *Ueber die kunstphilosophische Bedeutung des Briefwechsels Storm-Keller-Mörike.* **Eduard Hartmann:** *Das Periodische System*

*und die spezifische Verschiedenheit der Elemente.* **F. Sawicki:** *Der Kreislauf und das Todesschicksal der Kulturen.* **G. Söhngen:** *Die neuplatonische Scholastik und Mystik der Teilhabe bei Plotin.* **M. Grabmann:** *Der Anfang des Prooemiums zu den "sizilianischen Konstitutionem" Kaiser Friedrichs 11. in philosophie-geschichtlicher Beleuchtung.* **W. Schöllgen:** *Der anthropologische Sinn der astrologischen Schicksalsdeutung als der Platzhalterin der Vererbungstheorie im Weltbild des Thomas von Aquin.* **Joseph Lenz:** *Die Personwürde des Menschen bei Thomas v. Aquin.* **Erich Fledmann:** *Die Geschichte der Philosophie in Kants Vorlesungen.* **Martin Honecker:** *Die Wesenszüge der deutschen Romantik in philosophischer Sicht.* **Fritz-Joachim v. Rintelen:** *Schleiermacher als Realist und Metaphysicker.* **Heinrich Fels:** *Die Philosophie des deutschen Idealismus im Urteil Martin Deutingers.*

*Revue Thomiste*—N. S., T. XIX, No. 95: Mai-Juin, 1936.

**E. Neveut:** *Le désir des Sacrements.* A study of the necessity of the sacraments and of the nature and efficacy of the desire for them. The study is based upon the doctrine of St. Thomas. **Georges Frénaud:** *Les Inédits de Cajétan.* The nature of this study is revealed by its title. These works cover many subjects. It is hoped that there may be further works extant. This issue also contains: **Séraphin-M. Zarb:** *Saint Thomas et l'inspiration biblique.* **M.-H. Laurent:** *Processus canonizationis sancti Thomae, Fossae-Novae.*

*Revue neoscolastique de philosophie*—Tome 39 (Deuxième Serié, No. 50): Mai, 1936.

**F. Gonseth:** *L'idée de nécessité en mathématiques.* The relations between the conclusions of mathematics and external reality are analogical and schematic. The modern physics of the atom shows that there is no such thing as a point: yet there is a certain analogy between the geometric point and the intuitive microscopic view of the point of a needle. The same relation exists between the conclusion and reality as between the premises and reality. **M. L. Guérard des Lauriers:** *Du nécessaire en mathématiques.* Distinction is made in mathematics between the necessity that imposes itself as existing and the necessity that imposes itself as a logical conclusion. He further distinguishes between mathematical and metaphysical necessity, but warns that the two sets of distinctions are not co-extensive—we have both types of necessity in the metaphysical as in the mathematical.

*Kant-Studien*—Band 41, Heft 1./2.: 1936.

**Fritz Zadow:** *Kulturbewusstsein und national Wirklichkeit.* By an analysis of their respective histories, the author shows why the French have achieved a national consciousness and a national expression, while the Germans have not succeeded in doing so. He holds the highest hopes for the attainment of this end in the present position of the German people. This issue also contains: *Der Zeitbegriff in der modernen Naturwissenschaft und*

***das Kausalitaetsprinzip*** by Karl Beurlen; ***Studien zur Philosophie und Methodologie des Kausalprinzips*** by Wilhelm Krampf; ***Besinnung ueber Glueck und Unglueck*** by Hans Pichler.

---

***De Principiis Ethicae Socialis.*** By G. JARLOT. Rome: Apud Aedes Pont. Univer. Greg., 1932. Pp. 80.

Those who have used Denzinger's ***Enchiridion*** for theological matters and the ***Enchiridion Biblicum*** for matters pertaining to the Scriptures can realize the desirability of a similar collection of official texts dealing with the problems of society. Father Jarlot's slim brochure is too small to fill this need adequately; but it does at least show how convenient a larger work might be. The present pamphlet contains 159 texts from the official pronouncements on social matters of three Popes—Leo XIII, Pius X, and Benedict XV. The date of the most recent document cited is 1920. The matter is arranged chronologically; but an excellent topical index makes it possible to find quickly the texts bearing on any specific topic.

PAUL HANLY FURFEY.

*The Catholic University of America.*

***Group Participation as the Sociological Principle Par Excellence.*** By JOHN ELOF BOODIN. Berkeley: University of California Press, 1933. Pp. 45. (Publications of the University of California at Los Angeles in Education, Philosophy, and Psychology. Vol. I, No. I.)

American sociology during the last few decades has shown a marked drift from the philosophical approach. It tends to seek the causes of group phenomena in more or less mechanical factors which can be quantitatively measured and mathematically analyzed. Recently, there have been signs of a gradual trend of opinion away from this extreme position. The slender monograph by Boodin is one sign of this tendency. Boodin concedes that a theory which excludes teleology may look attractively simple; but it lacks reality. He argues for the importance of the human equation. "In the last analysis" he says, "society rests upon human nature; and we must understand human nature through its organization in group relations."

PAUL HANLY FURFEY.

*The Catholic University of America.*

# BOOKS RECEIVED

*Archivum Fratrum Praedicatorum.* Vol. V. Rome: Instituto Storico Domenicano di Santa Sabina, 1935. Pp. 411.

Bittle, Celestine. *Reality and the Mind.* Milwaukee: The Bruce Publishing Co., 1936. Pp. x + 388.

Blondel, Maurice. *L'Être et Les Êtres.* Paris: Félix Alcan, 1936. Pp. 540.

Chauvin, Paul. *Saint Benoît Nous Parle.* Paris: Bloud et Gay, 1936. Pp. xix + 288.

Covotti, Aurelio. *La Metafisica del Bello e dei Costumi di Arturo Schopenhauer.* Naples: Casa Editrice Rondinella Alfredo. Pp. xiv + 206.

DeMunnynck, M. and Rutten, C. *Lectiones Academicae Habitae apud Pontificium Institutum "Angelicum."* Rome, 1936. Pp. 120.

DeVio, Thomas. *De Nominum Analogia: De Conceptu Entis.* Rome: Institutum "Angelicum," 1934. Pp. 111.

Grabmann, Martin. *Handschriftliche Forschungen und Mitteilungen zum Schrifttum des Wilhelm von Conches und zu Bearbeitungen seiner naturwissenschaftlichen Werke.* Munich: Verlag der Bayerischen Akademie der Wissenschaften, 1936. Pp. 57.

Grabmann, M. and Pelster, F. *Opuscula et Textus.* (Fasc. VI.) Munich: Typis Achendorff, 1935. Pp. 75.

Grolleau, Charles. *Index Alphabétique et Analytique, Histoire Littéraire du Sentiment Religieux en France, par Henri Bremond.* Paris: Bloud et Gay, 1936. Pp. 256.

Gutmann, James (Trans.). *Schelling: Of Human Freedom.* Chicago: The Open Court Publishing Co., 1936. Pp. lii + 128.

Jarlot and Others. *Études de Morale et de Droit.* (*Archives de Philosophie,* Vol. XII, Cahier 1.) Paris: Beauchesne et Ses Fils, 1936. Pp. 184.

MacDonald, Duncan Black. *The Hebrew Philosophical Genius.* Princeton: Princeton University Press, 1935. Pp. x + 155.

Meersseman, G. and Simonin, H.-D. *De Sacramentorum Efficientia apud Theologos Ord. Praed., Fasc. I: 1229-1276.* Rome: Pont. Institutum Internationale Angelicum, 1936. Pp. ix + 138.

Merkelbach, Benedictus H. *Summa Theologiae Moralis.* (New Edition.) Paris: Desclée de Brouwer et Cie., 1935-1936. Vol. I: pp. 786; Vol. II: pp. 1029.

Mersch, Émile. *Le Corps mystique du Christ.* (Seconde édition.) Brussels; L'Édition Universelle, S. A., 1936. Vol. I: pp. xliii + 551; Vol. II: pp. 498.

Moore, Philip S. *The Works of Peter of Poitiers.* Washington: The Catholic University of America, 1936. Pp. ix + 218.

Mueller, Gustav E. *Philosophy of Our Uncertainties.* Norman, Oklahoma: University of Oklahoma Press, 1936. Pp. xii + 236.

Ottaviano, Carmelo. *Critica dell'Idealismo.* Naples: Casa Editrice Rondinella Alfredo. Pp. 194.

Patch, Howard R. *The Tradition of Boethius.* New York: Oxford University Press, 1935. Pp. viii + 200.

Pelster, F. and Grabmann, M. *Opuscula et Textus.* (Fasc. VI.) Munich: Typis Achendorff, 1935. Pp. 75.

Poell, Wilhelm. *Wesen und Wesenserkenntnis.* Munich: Ernst Reinhardt, 1936. Pp. xii + 207.

Rousselot, Pierre. *L'Intellectualisme de Saint Thomas.* (Troisième Édition.) Paris: Beauchesne et Ses Fils, 1936. Pp. xviii + 259.

Ruckmick, Christian A. *The Psychology of Feeling and Emotion.* New York: McGraw-Hill Book Co., 1936. Pp. xiii + 529.

Rutten, C. and DeMunnynck, M. *Lectiones Academicae Habitae apud Pontificium Institutum "Angelicum."* Rome, 1936. Pp. 120.

*Scripta Theologica:* Vol. I—*De Comparatione Auctoritatis, Papae et Concilii cum Apologia Eiusdem Tractatus.* Rome: Institutum "Angelicum," 1936. Pp. 351.

Seiler, Julius. *Der Zweck in der Philosophie des Franz Suarez.* Innsbruck: Felizian Rauch, 1936. Pp. 110.

Simonin, H.-D. and Meersseman, G. *De Sacramentorum Efficientia apud Theologos Ord. Praed., Fasc. I: 1229-1276.* Rome: Pont. Institutum Internationale Angelicum, 1936. Pp. ix + 138.

Souilhé and Others. *Le Pensée et l'Influence de Th. Hobbes.* (*Archives de Philosophie,* Vol. XII, Cahier II.) Paris: Beauchesne et Ses Fils, 1936. Pp. 107.

Temple, William. *Nature, Man and God.* London: Macmillan and Co. Ltd., 1935. Pp. xxii + 530.

Ushenko, A. P. *The Theory of Logic.* New York: Harper and Bros., 1936. Pp. xii + 197.

Whitney, Lois. *Primitivism and the Idea of Progress.* Baltimore: Johns Hopkins University Press, 1934. Pp. xxi + 343.

Windischer, H. *Franz Brentano und die Scholastik.* Innsbruck: Felizian Raueh, 1936. Pp. 64.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

Of The New Scholasticism, published quarterly at Baltimore, Md., for October 1, 1926.

District of Columbia, ss.

Before me, a Notary Public in and for the District aforesaid, personally appeared John K. Ryan, who, having been duly sworn according to law, deposes and says that he is the Editor of The New Scholasticism and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher, Catholic University Press, 2-20 Hopkins Place, Baltimore, Md. Editors, Edward A. Pace; James H. Ryan; John K. Ryan; Francis J. Walsh, The Catholic University of America, Washington, D. C. Managing Editor, None. Business Managers, None.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

American Catholic Philosophical Association, Catholic University, Washington, D. C.

No stock. Organ of American Catholic Philosophical Association.

President, John J. Toohey, Georgetown University, Washington, D. C.

Vice-President, William T. Dillon, St. Joseph's College, Brooklyn, N. Y.

Secretary-Treasurer, Charles A. Hart, The Catholic University, Washington, D. C.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

None.

John K. Ryan,
Editor.

Sworn to and subscribed before me this 30th day of September, 1926.

Notary Public.

[Seal]

My commission expires January 1, 1927.